BULLETIN OF THE

TAYLOR SOCIETY

A SOCIETY TO PROMOTE THE SCIENCE AND THE
ART OF ADMINISTRATION AND OF MANAGEMENT

SALES QUOTAS

A REPORT ON TERRITORY VALUATION

BAROMETERS OF PRODUCTION

THE ENGINEERING APPROACH TO THE PROBLEM OF CONTINUOUS EMPLOYMENT

SCIENTIFIC MANAGEMENT

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(Extract from the Constitution)

The objects of this Society are, through research, discussion, publication and other appropriate means:

1. To secure an understanding and intelligent direction of the principles governing organized effort for the accomplishment of industrial and other social purposes for the mutual benefit of

A. The Community
B. Labor
C. The Manager
D. The Employer

2. To secure the gradual elimination of unnecessary effort and of unduly burdensome toil in the accomplishment of the work of the world.

3. To promote the scientific study and teaching of the principles governing organized effort, and of the mechanisms of their adaptation and application under varying and changing conditions.

4. To promote general recognition of the fact that the evaluation and application of these principles and mechanisms are the mutual concern of the community, labor, the manager and the employer.

5. To inspire in labor, manager and employer a constant adherence to the highest ethical conception of their individual and collective social responsibility.

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CONTENTS

COMMENT 181
BAROMETERS OF PRODUCTION . . 183
By Carl Snyder
THE ENGINEERING APPROACH TO THE PROBLEM OF CONTINUOUS EMPLOYMENT 187
By Richard A. Feiss
SALES QUOTAS 194
By Charles P. Staubach
REPORTS OF SALES RESEARCH COMMITTEES 202
The Questionnaire 202
Sales Engineering 205
Sales Operation 208
SCIENTIFIC MANAGEMENT 213
By General William Crozier

COMMENT

WE are reprinting in this issue the reports of the sales research committees which appeared in the December, 1920, number. The demand for these reports has exhausted the earlier printing and seems to be a continuing one. It is a happy circumstance that the reports can reappear in the issue in which appears Mr. Stanbach's paper on the Quota.

THE quota principle is undoubtedly particularly applicable in the industry in which it has been most highly developed—the computing machine industry. But is there any industry in which it may not be advantageously applied to a degree determined by the nature of the industry? As Professor Wellman put it in discussion of Mr. Staubach's paper, it is not for every sales manager to attempt to copy the Burroughs method, but every sales manager should grasp the principle and then, according to the well-known Bull Durham formula, "roll your own." Is the quota idea at all different from the task idea, well known to shop managers—a careful investigation and determination of things which may and should be done, and then a scheduling of the things to be done in the form of definite, carefully-defined objects of accomplishment? And why should not the task idea be sound for distribution as well as for fabrication?

ALTHOUGH the titles do not suggest it, the articles in this issue by Mr. Snyder and Mr. Feiss are definitely related. Mr. Feiss' article is about unemployment, and Mr. Snyder's about barometers of production. But barometers of production, if desirable, are not desirable simply in themselves—as columns of figures; they are desirable because practically useful, and their practical usefulness is as a guide for managers in determining schedules of production and of investment in equipment for production. It is believed that if every manager could keep informed concerning the course of production in his own and other industries thoughout the country, he would be more conservative where he is now blindly speculative—on a rising market—and there would result less unbalanced production. Over-extension has to be liquidated eventually, and the liquidation takes the form in part of unemployment.

THE United States has recently entertained a distinguished foreign visitor—one of those leaders in industry whose enterprise is always several leagues ahead of most of the others because, although he walks with his feet on the ground his eyes are raised and look into the future—Mr. B. Seebohm Rowntree, President of Rowntree & Company, Limited, York, England, manufacturers of coca. In some of his talks he said that unemployment is a solvable problem, because it is a complex of detail solvable problems. He said we make the mistake of attacking and attempting to solve the complex instead of attacking and solving each detail problem. He made the remark also that the President had called together in the Conference on Unemployment a body of rare abilities, and that it would be a blunder to permit it to disappear—that it should continue to study and determine solutions of the detail problems which together make up the complex problem of unemployment. That has determined us to make unemployment the theme of the February meeting, each session being devoted to a detail of the general problem—and it will be found that these are details of good administration and good management.

IN some of his talks Mr. Rowntree discussed the question of industrial peace. In that connection he in one talk related the story of Lloyd George addressing a group of industrial leaders shortly after the armistice, somewhat as follows: "We all know the world is in a turmoil as a result of the new ideas generated by the experiences of the past five years, and we know that there will be eventually a settling down to something more stable; we do not know, however, what form that settlement will take; we can be sure it will be something different from the conditions before the war; what form it does take will depend in large part on the vision which you show in industrial leadership." Mr. Rowntree's vision is expressed in the following formula:

1. There must be a minimum wage, adjusted to prices, which will enable a workman to marry, raise a family of normal size in conditions of proper health, and lay by something for old age.

2. The hours of work must be short enough to enable the worker to recreate himself in whatever way he chooses outside the factory gates.

3. There must be unemployment insurance provided for by contributions of both employers and employees.

4. There must be democracy in the organization and conduct of an enterprise; the employee should assist in the making of the laws and in choosing people to administer them; and he should have the right of appeal in all matters of dispute to a court of appeal consisting of representatives of both employers and employees.

5. Employees should participate in the profits of the industry.

WE do not know whether the following incident related by B. C. Forbes in the *New York American* (Nov. 18, 1921), is an historic fact, but it is so pat that we hope it is:

"When the most famous of the early steel makers of America, Captain Bill Jones, first received (from the Pennsylvania Railroad) a chemical formula for improving the quality of steel rails, he was extremely annoyed, and remarked contemptuously, "This here chemistry will ruin the steel business." No steel plant today could be conducted without knowledge of chemistry. Rule-of-thumb methods are entirely out of date.

"Yet most big business men still take the Bill Jones attitude in conducting their enterprises; they pooh-pooh the science and the students of economics, and smugly imagine that their rule-of-thumb way of conducting business is the only successful way. Captain Bill Jones ridiculed the idea of anyone being able to improve the ingredients going into the making of steel rails because of knowledge of chemicals.

"Many of our industrial and even our financial giants similarly ridicule the idea of any student of economics being able to give them any useful, practical pointers to keep them to run their affairs more successfully. These men are just as foolishly short-sighted as Captain Bill was."

A few members of the Taylor Society, we are afraid, have an attitude approaching that of Bill Jones. We sometimes receive the query why we include in our program papers on "social problems"—a query which implies a wonder on the part of the enquirer what ecomists and other such folk have to contribute to the science of management.

Now our point of view is simply this: Taylor taught us to inquire into every condition surrounding a problem of management and to pursue investigation of that condition until knowledge gives us command of it—to eliminate or modify or adjust ourselves to it if it be undesirable; to accept or improve it if it be desirable; to acquire some degree of certainty in anticipation of it, if it be irregular in occurance; to *bring it under control.* To the extent that such *control* of conditions is established is there scientific management.

There are three classes of conditions which must be brought under control before scientific management can be established all along the line. The first is physical conditions—plant, equipment, tools, physical processes. That is the point of which Taylor made his attack and we have gone a long way towards solving such problems. The second is human conditions—executives' and workers' abilities and willingness to work, and we have begun the attack on those problems. The third is a complex of conditions outside any particular enterprise but profoundly affecting each enterprise, and in a measure capable of being brought under control by associated effort—cyclic changes and variations in demand; changes in general prices. We are beginning an attack on these problems.

All-round scientific management will not be achieved until all three classes of conditions have been investigated and brought under control. It is the function of the Taylor Society to promote investigations with respect to all. Economists and other students of social forces have as much to contribute respecting the second and third classes of conditions as have plant executives.

BAROMETERS OF PRODUCTION[1]

By Carl Snyder[2]

OURS is such an enormous country, and, in most lines of industry, production is on so large a scale, that secrecy is no longer an advantage. On the contrary, it is rather the manufacturer and producer who suffers most from overproduction or who loses most from underproduction at the wrong time. Retailers and even jobbers and wholesalers rarely have on hand any tremendous stocks of merchandise. The business of the wholesalers is characterized by a very rapid turnover and that of retailers by relatively small stocks of any particular line. The only person who is very deeply concerned in figures as to actual production is the large-scale producer.

This is especially true in those industries which involve the long-time processes. For them it is almost imperative at any particular time to know the market a long way ahead. The proof of this was the terrific losses endured by large producers during the past year. If it had been perfectly clear that production was unusually heavy, and that it was obviously topheavy in certain lines and rapidly becoming out of balance, caution and not the most reckless scramble to produce would have been characteristic of the earlier part of last year.

Now it is the usual belief of the average man that if anything bad has happened it is not likely to happen again very soon. The very quality of optimism which leads to this sort of a feeling is that which makes for his business success. The average man hasn't much courage or daring when his optimism gives out. It is a very general belief that a severe crisis, like that of last year, having taken place, a repetition of it is not likely to occur again for at least a considerable length of time. Such a view is based upon the general fact that, in the past, crises have been rather widely spaced.

But it may be well to point out that the historical parallel is no safe basis for forecasting the future. For example, it was the almost universal belief that when the world war closed a heavy and prolonged fall of prices would ensue. The air was filled with such predictions and many of them, unfortunately, were reduced to writing and even published. We know what happened: instead of a violent fall we had the most violent rise in prices ever known in peace times; instead of a depression which many anticipated, we had, after a brief lull, the wildest boom this country has seen in more than a generation. We have to go back to the days of the Western land booms in the 80's to find anything that was really comparable to it.

Now we have had an equally unprecedented and violent fall in prices. Practically nothing like such a fall in such a period of time has been known in a century and a half. The nearest approach to it was just before the close of the Civil War, and that brought on no such crisis as we went through last year, and was followed by a very rapid rebound in prices.

Now we have a flood of literature "explaining" just how it all happened, in the last two years, and the prevalent view is that, now that we have had a "post-war spree," what should have taken place two years ago will proceed in an orderly fashion, viz., the return to "normal prices," as if any such thing as normal prices ever existed. Those who have memories which outlast half a year will recall that, in 1912, before we had been disturbed by any world war or vast issues of Government debt or the like, the outcry at the high cost of living was almost as great as it became last year. We had then had a 50 per cent rise in prices from the level of 1896, and I think it safe to say that, in each year of this rise, there were dozens of predictions printed and on record that the rise had gone far enough and that prices would again turn downwards to "normal."

There is nothing drearier than to go back and read the kind of stuff that is printed year after year, in the way of forecasts and predictions and current explanations of current events. The marvelous thing is that we get the same sort of stuff almost in the same identical language, year after year, without the slightest regard for anything that has happened in the meantime. A distinguished financier who is not above this weakness himself, since he is much importuned for such vaticinations, once remarked that it would be an amusing or possibly mournful job to collect a few opinions and utterances of our financiers and economists and compare them with what actually followed. His reflection was that perhaps no one regards these things as of any particular value and that these predictions and forecasts are, therefore, speedily forgotten and cheerfully swallowed again the succeeding year.

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[1] A paper presented at the Cleveland, O., meeting of the Taylor Society, May 19, 1921.

[2] Statistician, Federal Reserve Bank, New York.

It is certain that, if we go back over the last two years and no more, it would be difficult to find anyone who had any kind of an idea of what was going to happen. The writer was among those who did not believe that prices would seriously fall after the Armistice, and is on record as having written a rather voluminous amount of argumentation to this effect. And there were numerous others who held more or less the same view. But it is very doubtful whether there was a single human being in the United States, of competent judgment, who foresaw, even remotely, the greatest rise in prices, outside of war times, known in a century. And, similarly, I doubt whether there was onyone very seriously to predict the terrible extent of the fall which has taken place since. There were many who believed that a very serious reaction was inevitable and there were some who made guesses in percentages even. But they seemed very hazardous. The writer recalls a conversation with one of the most careful and best grounded students of economics and business change, in which the latter made a guess that the drop in prices on Bradstreet's index would not be more than 15 to 18 per cent, perhaps, from the peak of last spring; to which the writer replied that he would be astonished if the fall did not run twice that. But this was only a kind of a lucky shot; and fell far short of the reality.

At the present time economic and statistical theory, as regards the movement of business affairs, is pretty distinctly in the pre-Newtonian stage. I do not say pre-Copernican. I think that actually we do have now a pretty fair vision of the reality. I think we have had, for example, pretty definitely our Copernicus, at least in the theory of money and prices. And I am proud to say he was an American—Prof. Simon Newcomb, one of the very greatest mathematicians and men of science that this country has produced since Benjamin Franklin. He was not an economist of the schools, and, though a lifelong student and writer upon economic subjects, he was nevertheless regarded by economists as an outsider, as an amateur. He brought to the subject the accurate and exact methods of the astronomer, and the mathematician, and it is of interest that his methods and his results failed to find any general recognition among economists for a quarter of a century thereafter, and until it was dragged from obscurity and given large support from careful statistical study by Professor Edwin Kemmerer and Professor Irving Fisher.

This thesis, in a nutshell, was that prices vary directly with the amount or volume of credit and currency in circulation, and the rapidity of that circulation, and inversely the quantity or volume of the goods and services to be exchanged. The formula, the so-called equation of exchange, especially as it has been modified and developed by Fisher, is now tolerably familiar to every second-year student in economics.

The bearing of all this on the value of barometers of production is simply this: From work done in my department in the last year, it is now clear that the volume of exchange of the nation, at least over a sufficient period, is directly proportional to the rate of production and varies with the production. This may not be true for a single year, but if we take a three- or four-year moving average of the total product of the country and the total volume of exchanges as reflected in bank clearings, we find that to all intents and purposes the two lines are very nearly identical over the last twenty or thirty years.

In this volume of production and volume of exchanges there is apparently an enormous inertia; that is to say, the variations from year to year are relatively small. Professor Persons, of Harvard, has estimated the extreme variation from one year to another as perhaps on the order of 10 per cent, and the work we have done in our own department leads me to the belief that this view is correct. And, if you stop to think a moment, it is almost necessarily so. A nation of a hundred millions and more, populating a vast expanse of territoy, with the most diverse interests and products, as in the manufacturing East, the agricultural West, the cotton-producing South, is not apt to be deeply affected by the same forces at the same times. If the steel trade is low, crops may be good, and vice versa. And, for the rest, the main work of these hundreds of millions of folks is now, as always, finding and distributing its food, clothing, shelter and its creature comforts. All the rest is a side play and merely a contributory and accessory factor. And the consumption of food and clothing and fuel and the like does not greatly vary from one period to another, even from the depths of depression to the heights of prosperity. The statistics for this are ample and the proof is positive.

Nor, apparently, does the velocity of circulation between good times and bad vary to anything like the degree popular imagination might suppose. And from the very slender amount of positive information which we as yet possess, it appears that this variation is in the same direction as that of production itself. In other words, when business is good production is high and the rate of circulation likewise tends to be high; as trade activity falls, production slacken and the rates of circulation slackens. The general level of prices, therefore, tends to a large stability under normal or usual conditions.

What we have had in the last five years, in the tremendous thrust of inflation during and after the war, has been, save for paper prices in this country in the Civil War, outside of any precedent within more than a century. Normally and usually, the rise or fall of the price level, the average of all prices, is relatively slow and, contrary to much that you may read in popular text books and eleswhere, does not sensibly affect the rate of production, either way. That is to say, the general level of prices may be falling and production may be rising very rapidly, as it was in this country in the '70's, or there may be a sharp fall in production, though for a much briefer time, while the price level does not particularly change.

In other words, in the general price level the producer has, as a rule, a rather firm base from which to measure other changes; and if he keeps clearly in mind the general trend of this price level, as to whether it is up or down, he may gauge fairly well what should be the general run of his costs and prices.

But what is true of the general price level is in no such degree true of the level of individual prices. These may vary to quite an extraordinary extent. We have had in the last few years a quite spectacular and in many respects almost unprecedented instance in the case of rubber. I suppose that not in modern times has there been a great industry to arise with such amazing rapidity as the plantation production of rubber. The annual production today, for example, is thirty times or more what it was ten years ago. Now, it is obvious that all this astonishing increase in the product could not have gone on year after year as it did without a corresponding consumption. And yet, in the face of this almost unbelievable consumption, the price has steadily fallen. Today rubber is selling at less than one-tenth of what it sold within the last ten years. It is as if, for example, wheat, which we used to think high at a dollar or a dollar and a quarter, had sold down to ten or twelve cents, or pig iron to two or three dollars a ton.

Again, if we look back over the last thirty or forty years, we shall see that prior to this war a great many products had likewise fallen pretty steadily in price. Notable examples are pig iron and steel and all their immediate products. And, on the other hand, throughout this long period, other things had steadily risen; as, for example, lumber. The long trend of lumber prices had been upward and the long trend of iron and steel prices had been downward.

In a broad sort of way, taking a thousand or more articles of commerce, it may be said that, measured strictly in gold and disregarding paper money prices, they were falling in money value from about the end of the decade of our Civil War down to about '93-'96. This was true all over the world. And, in the same way, all over the world for the next quarter of a century prices were rising. But this did not prevent individual prices, like wheat or steel or cotton or copper, from fluctuating very violently. This latter was obviously on the whole the simple play of supply and demand, quantity of product as compared with quantity of demand.

It ought to be clear now that the relative price of almost any article of commerce may be calculated if all factors are known. In the case of the great raw products, like wheat, cotton, coal, and iron, these things are pretty well known, and, within reasonable limits, their relative values may be computed. And this is already being done with varying degrees of success. There seems no good reason why this should not be equally true of their secondary products. It is perfectly obvious, of course, that in a broad way the price of any article is determined by the wages paid for its production, the costs of the raw material, the amount of overhead and selling expense and the like,. All these things tend to vary together more or less except in very unusual times, such as we are in now. They represent more or less fixed charges. Out of all the tremendous effort that is required in the fabrication of the vast quantities of goods consumed by our hundred millions of people, there comes as a rule a small profit. This profit varies widely from industry to industry and from one kind of trade to another. Measured against the selling value of the product it may run from as low as one, two or three per cent, as in the case of the wholesale grocer or the big meat packer, to as high as ten, fifteen or twenty per cent, in the case of the more hazardous enterprises, such as the steel mills and the like, where tremendous outlays of capital are required and the business is subject to wide fluctuations in earning power. It is apt to be, as Mr. Carnegie put it in the case of steel, either prince or pauper.

But these high profits are relatively rare or of very brief duration. For the most part, the margin, as we all know, is very narrow and may easily be wiped out. It is because this margin is becoming narrower year by year, or at least more difficult to attain, by the very strenuous competition involved, that no method which will contribute to these profits or to their stability can now be neglected.

One of the foremost of these I feel to be the business barometer. We have the clearest proof now, I think, that it is not very difficult to determine overproduction, and I will say, equally underproduction. Last year, for example, it was perfectly clear that certain industries were producing an amount of goods far in excess of the usual relative quantities of others. In other words, we had unbalanced production. Now goods are exchanged for goods, it is needless to say, and not for money. One man buys the product of another with his own product and only to a slight extent with his accumulated capital. I doubt if all the accumulated capital in the country (and we have more here than anywhere else on earth), would suffice, if we could realize on it, to keep us going by as much as three or four years; and it is quite certain that if all production were to stop tomorrow we should all be starving in another three months.

I make bold to say that it is the balance of production that is alone of concern, and that, practically speaking, the price, by which I mean of course the general level of all prices is of practically no concern except that it be fairly stable. What I mean is that we could just as well have gone on at the top prices of last year, provided we did not wish to expand any further, if we had not been buying and consuming silks and fine raiment, automobiles and many similar things out of all proportion to the capacity of the country to purchase. The capacity, in a word, is measured not by the amount of money or bank credit or capital which we have in our possession, but the product and salability of our corn and cotton and wheat and meat, and the other big basic things. Destroy the balance as we did, and a crash was inevitable. Credit conditions and the forty other things we have been offered as an explanation of the collapse were mere adjuncts thereto.

Now, let us suppose that we could have had accurate barometers of all the principal lines of industry and business activity. Since I am here in the Taylor Society, and in the primal precincts of precision, shall I say rather barometers and thermometers! For it is clear that certain industries are more barometric, while others, one might say, are more thermometric. Supposing we could have seen clearly just what was happening, it is pretty evident that the saner, shrewder or more foresighted captains of industry would have slowed down on their purchases, reduced production, used up their inventories as far as was feasible, and made preparations for a change. And if only this had been done on a broad enough scale and begun in sufficient time, it is evident that, instead of the rather violent collapse which we have gone through, we should have had merely a slowing down of a too rapid pace in industry, and, after a sufficient time to make the needful adjustments, we should have gone ahead without any serious interruption with the industrial life of the country. Wages, costs, profits, would have adjusted themselves to the proper level without any serious friction, and without entailing the quite appalling losses which occurred in many lines.

I am aware that this may seem a somewhat overstressed optimism. Professor Day, of Harvard, for example, speaking at Washington this winter, offered the thesis, as a subject of discussion, that we could never get rid of the cyclical variations of industry. Which was tantamount to saying, I suppose, that we can never wholly sidestep the effects of emotion, enthusiasm, cupidity, miscalculation, bad judgment, or rash speculation. That is quite possibly true. But I am sure that we can do a great deal to smooth out the curve; as I suppose you would say, reduce its amplitude.

For example, from about the period that this country sealed its adhesion to sound money and the gold standard, that is, about 1896, to the outbreak of the war, we had a period of quite unusual placidity and even growth. This was interrupted by the sharp panic of 1907 and again, to a much less extent, by the stock market depression of 1903 and 1904. But neither of these meant a serious interruption of production, and, on the whole, the general tenor of business throughout these eighteen years was remarkably even and generally profitable. With the establishment of the Federal Reserve System I think we may fairly consider that purely money panics, like that of 1907, are pretty definitely at an end in this country, just as they have been in England since the adoption, following the panic of 1866, of a sound and consistent rediscount policy by the Bank of England—that is to say, for more than half a century.

In the mind of the writer a period like the present, of severely restricted mine and factory production, with widespread unemployment and enormous economic loss, is as impeachment of the economic intelligence of the country. And, without dreaming of any fantastic Utopias, I think it is fairly within the limit of reason to think that these may be very largely avoided. Practically speaking, this would involve nothing more than the avoidance of overproduction of banking, credit and currency on the one hand, and overproduction of goods on the other. If we can so control our credit and currency economy as to prevent such a profound disturbance of prices as in the last few years. then we need not needfully face the disaster and disorganization attendant upon a forty or fifty per cent fall in wholesale prices. And I am one of those who think that this is simply a matter of intelligence on the part of those in control of our financial and industrial policies.

Then, if we went one step further and watched very carefully the rate of production in all the leading lines of industry, we need not have what is commonly called overproduction, or, in more precise terms, production out of balance. In other words, by perfectly feasible and attainable means—a stabilized system of currency and credit and accurate barometers of business—I think we could do a very great deal.

THE ENGINEERING APPROACH TO THE PROBLEM OF CONTINUOUS EMPLOYMENT[1]

By Richard A. Feiss[2]

IN the first place I wish to say just a word of goodspeed to the inauguration of this movement of The Taylor Society Section of the City of Philadelphia. I feel that while the headquarters of the Society and its managing head are in New York, its heart always will be in Philadelphia; and I am glad to see here established a movement which portends so well and which I hope will not be retarded to any great extent by the little contribution I am trying to make.

The problem that your worthy Chairman has put up to me is a practical one from the point of view that it is so intimately and fundamentally a part of the entire problem of management in doing business in these times, but there is such a wealth of material that it is very difficult to confine oneself to those points which might be of interest to you and also keep within the limits of reasonable time. I shall, therefore, start out with suggestions only and touch upon some points more or less at random and informally, leaving it to you to take at least half the time to be devoted to this part of the meeting to come back at me with those things which are of interest, or those things which you question in the subject which I may just skim over. I need not touch upon the social and economic burden that unemployment involves. These things have been sufficiently called to our attention, and I need only emphasize the points that are material to the present-day situation in which business finds itself.

As Dr. Person has told you, our firm awakened to find ourselves overnight come from a seller's market to a buyers' market. As a result we have instituted a selling campaign backed up by advertising, which laid stress particularly on the point that the problem of unemployment is material to the recuperation of business, and that unless the retailer or the distributor—or as you may want to call him, the public—realizes that the process of judicious buying is essential in order that the mill can keep going—in order that there may be reasonably full pay envelopes—there cannot on the other hand be any retail trade. That has been the picture that this campaign of ours has tried to put across and incidentally with some success.

Let me call your attention to some of the advantages of stabilizing employment. Most of them are obvious. For instance, to the employee it is essential primarily, that he have the assurance of a steady income. That is imperative if you would either hold or train efficient employees. The lack of that assurance of a steady income is probably one of the most potent factors in industrial unrest and unsatisfactory social conditions such as we are struggling with at all times. In order to get the cooperation necessary to efficiency, before even the ground work can be touched, there must be that relief from the constant fear of unemployment.

A great deal has been said about opportunities for advancement, both as an incentive and as a means to the upbuilding of our industrial and social structure. I do not know whether any of you have ever sized up the situation in a practical way as applied to the real upbuilding of a plant organization. If so, you would have seen how unemployment retards the development and advancement of the individual. The interruptions are not only discouraging but the resultant ineffectiveness reminds me of the fable of the frog which, when it jumped up three yards, lost two yards.

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[1] An address before the Philadelphia Section of the Taylor Society, Jan. 31, 1921.

[2] Vice-President of the Taylor Society; General Manager the Clothcraft Shops, The Joseph & Feiss Co., Cleveland.

In this connection, I wish to say that this problem is not one of the particular moment. It is ever present and its solution is fundamental to industry. I was very much interested the other day while attending a meeting of some charitable associations in my home city of Cleveland, in listening to the report of a section concerned with personal relief work and the causes of need for relief during the year of 1920, which was certainly a prosperous year, and learning that aside from sickness, unemployment was the outstanding factor.

To the employer in his relationship with his problems, the importance and advantage of stabilizing employment are imperative both in the plant and with business in general. This fact, nevertheless, is readily lost sight of. It has been surprising to me to see how quickly a man with responsibility and with good business experience will lose sight of some of the fundamental principles essential to the preservation and maintenance of his business at times of change and at times that are abnormal. I personally know a number of employers who have admitted the necessity of steady and continuous employment who have not stood up to their principles when the test came. So I feel it essential to lay a little more stress on some of the advantages to the business from the employer's point of view.

We have spent years in patient analysis, research work, planning work, and the installation of scientific methods, and the establishment of improved if not proper industrial relations in the plant, so as to get the best results from the efforts and time of the operatives, and the rest of the organization. And it is apparent to us that the only possibility of permanently keeping down costs is continuous production. It makes no difference how you run your cost system, so long as you run one, the shutting down of the plant and the reduction of hours will somewhere show a charge which will add materially to the cost of your product at any time that the plant falls below the normal output.

It is an easy thing to figure. A great deal of the overhead of the plant goes on, whether you work or not, and sometimes, somewhere, it is going to be charged back to the unit of production, and passed along for the public to absorb. It is true that under unusual conditions there is a possibility of reduction of overhead in the line of executive salaries and some other items, but the percentage is so small that it has very little effect as compared with the enormous cost that is added to every unit produced under conditions of slackening employment.

Another factor that should be apparent to the employer and which does not seem to be given proper weight, is the effect of unemployment on labor turnover. Generally speaking the plant that reduces its time reduces its force where it most hurts. You know there is a kind of maxim in business that the really efficient employee is never out of work. No matter how slow business is, no matter how slack times are, there is always some employment and that employment is obtained by the people who are efficient and most valuable to your organization. If you are not furnishing them with sufficient employment of a kind that gives them a satisfactory earning opportunity, it is the ranks of the efficient and those most valuable to the organization which are first broken. It is very difficult to realize the marvelous skill attained, and the long time it takes to acquire it and to develop one's faculties to become an efficient, productive, profit-paying operator. It is also difficult to realize how much permanent damage is done by the loss of such an operative. There is sufficient loss of this nature under the best of conditions, but in times like these the loss is tremendously aggravated. Actual statistics are not available, because the conditions of unemployment vary so much, but in such little experience as we have had in the past and which is borne out by the experience of others, any substantial period of unemployment will reduce a force of skilled operatives from ten to twenty-five per cent. The loss is not only one that is felt in the rebuilding of the operations involved and the consequent loss in productive potentiality during the upbuilding process, but the loss in morale by the reduction of the tone of your organization is something that can scarcely be estimated. In other words, the tone of your organization is made up by the class of operatives that you have.

I realize, of course, in touching upon these things, that there are many difficulties to be overcome in most industries. But I think I can speak somewhat authoritatively, coming as I do from an industry where the tradition that irregularity of employment is inherent in the industry, as well as other such traditions which probably date back to the time of Adam when the men's clothing industry in the shape of a fig leaf had its first inception.

But after all there are two kinds of traditions—

good and bad. It is unfortunate that so much of the bad survives with the good. I think that which is right and which permits of growth and gives inspiration and backing—a feeling that you have history back of you—is one of the finest things in the world. I think one of the finest things we have in the Clothcraft Shops is the fact that we are this year to celebrate our seventy-fifth year of continuous business, and seventy-five years for a business is pretty old in these young United States. We have a lot that we have inherited, a lot that is inspiring, that is splendid, that moves us on; but we must also be careful to inherit the spirit and not the corpse.

The clothing industry, therefore, ought to be a pretty good example of an industry with difficulties in the matter of continuous employment. One of my early recollections of the clothing industry is the instance when I was told that it was a foolish question to ask why we worked eleven hours a day. I was told we ought to be glad we did not work fourteen hours a day, because we would likely not have any work for six weeks after the rush season. When I asked whether or not an effort had been made to obtain materials and run a plant without orders on the books, I was told that only a fool would try anything so absurd. In a burst of confidence my informant also said: "Look at the fine hand it gives you in case your wages get high. You can start to deal all over again with a brand new deck." That is a trick of the trade, and it is a trick that is being played at the present time. Incidentally, in their attempt for a new deal employers think they can stack the cards.

Fortunately, I found myself in a particular organization where progress was also a tradition, where the generation that had gone before, had seen the vision. They were attempting some of those "foolish things" to overcome the obstacles to continuous employment which are inherent in the business. We have a double problem in this business. It is seasonal not only because of the style factor and the short selling season for both the manufacturer and retailer, but also because we are dependent upon another industry which itself is traditionally seasonal. What is worse, the industry is chiefly located in tradition-bound New England and Eastern Pennsylvania.

We knew all about the chances of making up a product for stock before orders were on our books. We knew all the precarious situations due to changes in buying conditions that arise from time to time and tend to slacken demand. We knew of the many other obstacles to overcome, but we decided that anything that ought to be done can be done. I think that is one of the fine things, the big things, that scientific management teaches—the responsibility of doing the thing you ought to do regardless of the obstacles. And we did not overcome any of the problems over night. I am not going to give you any heart balm; I have not any salve or doctrine that will help you reach heaven by a short route. It took a long time and hard work and a lot of things that had to be done. We saw the lack of standardization in our business, and we found that it was actuated, as so many businesses are, by the one thing that is the bane of all business—opportunism. You will find that it is the greatest motive power of the business man. It is one thing I hope that this world will live to see overcome, because it has done more damage than any other thing in perpetuating the wrong kind of tradition in work.

Not many seasons ago one of the most enterprising clothing manufacturers in the East was discussing with us various matters regarding these very problems, and the discussion led from one thing to another, but always came back to the difficulties of operating the business. At that time a certain style of garment had a large vogue. It was reported that no young man would buy a suit of clothes unless made up along these particular lines. Now, these particular lines involved quite some complication in manufacture. They meant special operations to be used for the season only, the making of goods according to the style, which, while we knew they were in demand, would not be in demand the minute the season was over. It drops off just the way it starts. The style I mention interfered with efficient production in every plant turning out men's clothing in the United States. It was in that season that we had brought those policies which we are building up to a definite consummation. That consummation involved the elimination of this kind of manufacture. We were being criticized for this by our good friend. I asked him a few questions. "In making this style is it not costing you more than it should?" "Yes." I said, "You know something about the practical side of manufacture; let us look into it. I know by analysis in our own shop that this means adding 20 to 25 per cent more in operation time. Now, that means changing the layout; and if you are limited in space, it means much less output and at least double the amount of supervision, at first." He answered, "But, what difference does that make? We get our price."

I said, "It makes just this difference. You are selling all the goods you can make, but you cannot make all you wish. Your only opportunity for profit is to increase the selling price per unit. You know that a thing like this does not last, and anybody who is in the style business knows it. You are not to any extent producing other models of a standard make upon which you can build and maintain steady employment and the continuous production that is necessary to minimize your cost, and you have nothing upon which to base your selling policy, which has to be built up when the tide changes. If the tide changes overnight, as it does, within a period of a few days, you will have to reorganize your shop without even the slightest foundation to build upon. Do you know what that means? It means unemployment, additional costs, and a lot of other things." "What would you do about it?" he asked. "I would get away from opportunism. You are making this style because it is the line of least resistance." And I pulled out from by desk a magazine which has a wide circulation and is one of our best known advertising mediums and whose rates are of the highest, and called his attention to the large number of advertisements of this particular style, among which was one from his own particular concern. "Advertising the style in this manner," I said, "must involve an expenditure to you and other houses of at least $40,000 a season." It seems to me that when a demand comes for the production of an item that costs more, that upsets production, for which the public pays more, and when the demand of itself is such that it will take a good part of the output and we stimulate that demand by the expenditure of large sums of money which are charged back to the public, instead of spending that money to stimulate the sale of staple items to keep our plants going, and to build up a continuous service, I say it is opportunism, it is poor business, it means unemployment and the wrong point of view."

I give you this as an example of opportunism. There are other examples that I can give you, such as in the textile industry in this section of the country. It is the short look ahead. It is the kind of thing that seems too prevalent among so many men, whether business men or others. So many of them seem to have their horizon too close to their noses! The kind of thing that is going on in textile industries, the reduction of hours and the talk of wage reductions and other propaganda, is to a great extent a smoke screen. It is only opportunism. It is old stuff. It is merely seizing the opportunity to take advantage of co-workers who are just as essential to the service of production and distribution as those who seek to take advantage of them. This is only killing the goose that lays the golden egg. To my mind, a great obstacle, if not the greatest, that has to be overcome, is the opportunism that motivates a man at the machine; the executive and those in control of the organization. We have to be educated to look at business and our business responsibility not as a means of immediate opportunity, but as an obligation for service.

I have already mentioned lack of standardization. You can do a great many things in the line of standardization that will affect this problem very directly. It is taken for granted in our business that it is necessary to show a line composed of a vast variety of style and models. We have not done this for some time and we have been able to substantially increase our business since adopting a policy of standardization. If this is done throughout the industry it does not mean that the men of the country will have to wear uniforms; not at all. It means that we realize that business is a matter of service. Its ability to make itself permanent depends on its ability to serve and to continue to serve. Now, we cannot give service unless we concentrate on that which we can do well. We are one of the large manufacturers of men's clothing in this country, but still we are only a part of the service that supplies this particular want. We do not expect others in the industry to concentrate on the same things that we produce. A certain portion of the trade demands an extremely fancy line of clothing every season. The business concentrating on this class of merchandise could standardize to a very great extent along certain lines, but it would not be able to compete with us along the lines on which we are concentrating. This is the kind of standardization that we have in mind. Of course, you can carry anything to an extreme, but you can also carry things to a logical limit. There are also other things that can be done along this line.

Before I leave this subject of standardization, I must call your attention to the fact that it is a kind of thing which calls for coordination. Our business started in its problem of steady employment with coordination between merchandising, manufacturing and selling. Generally one predominates the other. That is wrong! They have to work together, and in our instance, inspired by my partners, who were then my employers, it was decided that we take a chance, and we were surprised to find how little chance we did take. We found out in standardization along only limited lines that we were able to improve the product by reason of larger production and at the same time reduce the cost. This enabled us to sell more readily, and with greater certainty to anticipate our sales, which in turn made for better service to the consumer and better service by reason of continuous production to our employees.

We had to provide proper maintenance of equipment. We had to provide proper instruction in the use of equipment. We had to standardize our modes of handling materials and establish routing methods. We had to provide standards for each individual to aim at. In other words, we had to provide a job for them. We had to provide other proper conditions for employment which I will not go into at this time.

It is important that employment be stabilized at all times, if it is to be stabilized during exceptional times. I will touch upon a few things that I think will interest some of the members here, and show you, when you come to think about it, how little is really done in the average plant in some of the fundamentals of business. Do you know of any employer who would run a plant without not having an inventory of his materials? I do not, and still not one employer in a thousand has the slightest inventory of his labor or his labor requirements. His waste of labor is many times greater than it can possibly be in materials and equipment. He has the best "pick up" in this connection that I know of. Our inventory and balance of personnel accomplishes more than even the balance of stores. This is often merely indicative, but the balance of personnel is working on the job for or against you every minute in the day. The first thing that a man should do in starting in a business in which there is storekeeping is to keep careful tab of what is needed and what he has, and that is just exactly what we do in regard to our personnel problem. We have a very clear notion of what we need to turn out a given product, and it is just as important to know that we have so many operatives for a given operation as it is to know that we have so much cloth or other materials on hand for that operation to work with. To do this we must know further what is required of them, what standard of output is to be expected of them, in order that if it takes twice as long to do one job as another there will be twice as many people on that job as on the other, so that production will not break down and you will not continuously add to costs by unemployment. This may be merely interesting to you. I say it is essential.

There are many other problems in connection with the maintenance of a steady working force. Not the least of these is the development of the morale or spirit of the organization and the means for maintaining that spirit. Machinery is necessary or advisable for the adjustment of grievances, as they are generally called. I do not like the term adjustment of grievances because I think it gives one the wrong view. We think of our service department as the department for the discovery of grievances. The adjustment is least important, the discovery is the essential thing. There are a lot of things going wrong all the time from somebody's point of view. Maybe they are a hundred per cent right, but as long as they are wrong from somebody's point of view, it is necessary to discover them in order to set them right from that point of view. Failure to discover such a point of view does not affect that person alone, but it delays production all down the line; it upsets many things and is likely to result in absenteeism, if not in increased labor turnover. This matter of absenteeism and labor turnover is a very important proposition. Industry has spent an enormous amount of time in trying to find out how to make people efficient and little time in finding out how to obtain and to keep them. We talk about efficient machines and tools and how to handle them, but we do not get at the heart of business—employment, including methods of obtaining the best employee and obtaining his best will. Industry's lack in this respect is one of the fundamental wrongs from a manager's point of view, as I see it.

Many of our business friends come miles to ask us how we get so much greater production per capita than is generally obtained in the industry. They think there are some tricks to it. They know there is some science, but do not know that when you come to applying the same methods to their propositions that it would be out of place because the majority of people are not permanent members of the organization.

I do not want to leave this subject without saying that in order to accomplish these things we must lay great stress upon education. It seems to me that there is one thing that is common to all positions of responsibility, and that is the necessity of education. Now, I am purposely avoiding saying much about educating the public because there is too much opportunity of passing the buck. I need not explain the game to you. It is one of the great games in this problem of unemployment for the business man and manager to pass the buck. After he has done all he can to pass the buck to the employee, he turns around and passes the buck to the public. If he wants the cooperation of the public he wants to understand what cooperation means. It is one of the most abused words in the world. Most people I know seem to think that cooperation means the thing that the other fellow can do for you. If we just turn the thing around and realize that cooperation really means our responsibility to do our share as a means of producing cooperation in the other fellow, we would get a solution to many of our problems. Establishment of cooperation and the solution of all these problems depend upon education. In this connection we must consider the function of managers and executives as fundamentally educational, and we must provide above all things for their systematic and progressive education. How can you ever have your children taught in a school with teachers who themselves have not had adequate training? It cannot be done. I firmly believe that progress to the solution of these problems depends on the education of the employer, and the executive's neglect of this fundamental is at the seat of most of our trouble. If the man higher up is educated, you need not worry much about the rest.

I have tried to give you only an insight into the solution of this problem and perhaps some of the things I have said seem illogical. I have said one of the solutions to employment is unemployment. In other words, I have said that in many instances we are employing too many men in normal times. This may not seem consistent as a solution of unemployment. I think it can be accepted as an economic fact that the greatest stimulus to consumption is production, because consumption is stimulated in proportion as we bring things within the reach of the average man's pocketbook. By an inventory of positions, by the understanding of our business, by applying research methods, taking our business seriously, looking at it as we must from the point of view of the responsible engineering manager, we will find many things in the average business that can be remedied and that will permit the manufacture of more goods with less people, less effort and less cost. When business is on this basis we need not worry much about reducing the force or the payroll. Our organization has felt this business depression. We have not got all the business we want, but there is no one whom we have had to lay off.

In connection with the costs I believe our dear friend, the late Mr. Gantt, has made an enormous contribution in what he has written about cost systems. He points out that it is wrong to charge maintenance and other overhead charges to the manufacture of the product in instances where there is lost time and production is below normal. He has shown us that lost time is chargeable in many instances to lack in the quality or supply of materials, the lack of orders or other managerial deficiencies. When you do things as they should be done you will readily see that the last thing you can afford to do is to shut down your plant. A record of our employment and hours shows a remarkably continuous and straight line. It is of course true that during these times there have been a few days off and periods of somewhat shortened hours, but this has also occurred during prosperous times and is practically entirely due to the fact that those upon whom we are dependent for materials have not kept their plant steadily running. Our record nevertheless shows a remarkable steadiness of employment under all conditions and a consciousness of the necessity of exerting every effort to maintain continuous employment basis to the organization, industrially, socially and morally.

I have not said much about unemployment in times of depression such as exists at present. This problem of unemployment from the engineering point of view is a problem of all times. We must be organized against it in normal times to prevent its occurrence on a general scale. When once started it is a kind of vicious circle inasmuch as unemployment is caused by unemployment. The vast majority of the consuming public consists of those employed. Consequently when employment ceases the ability for consumption of the products of industry ceases. Therefore, from the point of view of the engineer and manager the solution to unemployment and all the ills attendant upon unemployment is the conscientious organization and systematic effort at all times toward continuous employment.

AN ADDENDUM

The following may be considered an addendum to Mr. Feiss' address on unemployment printed elsewhere in this issue. It is an excerpt from a letter from Mr. Feiss to a friend who had been appointed member of the Presidents' Conference on Unemployment:

> It seems to me that the first thing to consider is how unemployment periods are brought about. In a simple way it appears that during so-called normal times prices tend to rise and we increase output and expenditures of all kinds on a large scale. By output in this instance I mean total output of industry and not the output of the individual. During times of this kind credits are easy and are readily expanded. The tendency in many industries is to develop production facilities without due regard to means of distribution. Consequently we have a state of unbalanced production, and for a short period of time demand is outstripped by output. With prices and profits going up and credits easy, expenditures are sanctioned that are in many instances extravagant and unnecessary for the efficient conduct of business. This also applies to other spheres of life. Finally, by reason of non-absorption of surplus product, by reaching the limits of credit expansion, or by reaching the limit of price inflation or some other cause, we arrive at the peak and the logical reaction sets in. We find the business world with stocks on hand that are being rapidly depreciated. We find sales falling off. We find our business and its product which constitute security for credit of less value than it has been and we find credit rapidly shrinking. This we call business depression and it results in unemployment.

When periods of unemployment start our mediums of publicity are generally filled with the great cry about extravagance, advising people to be economical, to buy little or nothing, to reduce wages and expenditures of all kinds. I realize that this is not all of the picture, but, nevertheless, this is an outline of what occurs, and it is important that we get such an outline before us before we try to solve the unemployment problem which is not in itself a cause but a result. I feel that with a rough outline of causes we can better outline some of the remedies.

In the first place, I would say that it is essential that we learn and keep in mind through public agencies the economic factors in business. Most of us are ignorant on this score, and those who are not have not available the facts. Along the lines of the recent service established by the Department of Commerce under Mr. Hoover, we should have for all industry timely information not only as to output but as to the supply of raw materials, and also as to the rate of consumption or demand. In this connection I would call attention that any statistics showing prices and their rise and fall should not be limited to wholesale prices, but should cover the field of raw material prices and all retail prices as well. This kind of service backed with publicity of the right kind would not only prevent the increase of facilities of production at a more rapid pace than the increase of demand, but would further give information leading to control regarding sources and manipulation of raw materials. Such information should be the basis of credit expansion or contraction as specifically applied to a given industry. In fact, with such information there is no reason why a system such as our splendid Federal Reserve system cannot use its power to prevent over-expansion and over-extravagance in prosperous times. It is over-extravagance in "good times" that is one of the greatest causes of "bad times" and resultant unemployment. It is the unessentials in business, the frills, the heedless expenditures without any investigation as to their permanent use, that lead to the cutting off of expenditures the moment there is any contraction in credits or business. We must, of course, realize that whenever we cut off expenditures we cut off the use of some product or some service and consequently cut off employment.

By the same token I feel that the propaganda for not buying and the propaganda for cutting wages at times of depression to be only an aggravation of the unemployment situation. Trying to overcome unemployment we are trying to find work for the unemployed. Work can only be supplied where there is a demand or anticipation of a demand in the case of commodities, and it cannot be supplied in the case of service unless there is a demand. It seems to me, therefore, that while we should have plenty of propaganda against unnecessary expenditures in times of plenty and while every business should accumulate a definite fund during such time to expend at times of non-employment, we should have propaganda for making expenditures during dull times instead of propaganda of not buying and not making expenditures. Plans for legitimate expansion and improvement should be put into effect, and funds accumulated for this purpose and for other purposes should be expended as a preventive of unemployment at times tending to unemployment. We should rather look for the job that can be made at such times than the job that can be vacated or done without. While I realize that probably at times of this kind adjustments must be made in labor rates because we are not able to control the proper proportionments and adjustments in the scale of wages during times of rising prives, nevertheless, propaganda to lower wages generally or publicity of this nature at any time is harmful to business and to the employment situation. It is far more essential that we have publicity for the fact that cutting down income cuts down buying power and cutting down buying power cuts down buying and therefore business. In this connection I would state that propaganda of this kind is equivalent to a threat to every wage earner and salaried person that his income might be curtailed at any time. This threat alone is sufficient to curtail normal buying to an extent sufficient to cause widespread unemployment. While I realize that an element contributing to periods of depression such as we are now going through is a "buyers' strike" against high prices, I think it can be demonstrated that prices can be reduced by elimination of the manipulation of markets for excessive profit and by the elimination of waste in management and in industry in general. Reduction of wages in many instances would lead to increase in cost and in most instances in practical effect has no direct bearing on cost reductions. I believe, moreover, that it would be practically impossible to find any case where the reduction of wages in the industry has resulted in an increase in buying. While a "buyers' strike" is unquestionably a big factor in the present depression, it is a well-known fact that people will not buy when prices are declining. On the other hand they will buy when assured that prices are going to be no lower and when assured that they are as low as is consistent with reasonable profits and a fair return to everyone concerned.

One of the important things relating to the unemployment problem is cost accounting methods. When business slacks off to any extent there are in all business certain expenses that go on or may even be increased during such times. At times when there is a curtailment of demand and business slows up, business men are accustomed to figure what their service or product costs, and in accordance with methods of accounting in general practice their conclusions show them a picture of the rising unit costs as business falls off. As cost is nearly always distributed over the product the picture generally shows this as an increase to the cost of production. Cost methods should be set up so that service and output costs are always shown as separate entities. Factors of delay should be studied and provided for in normal times, and gains or profits chargeable to delay time not used should be accumulated and set aside. Output or service costs should not show any additional costs for delays due to lack of materials or lack of business. In this way during slack time unit costs will not appear fallaciously to be going up, and production or service can be produced and sold for at least the cost they can be produced and sold for in normal times. Additional expenditures because of lack of business will be kept separate and would be chargeable to the fund for such purpose or postponed and spread over the business charges during normal times.

An important factor always contributing toward unemployment is the seasonableness of business. A great deal could be accomplished if means were instituted to educate the buying public to co-operate in the elimination of this evil. A great deal already has been done in this connection in various industries and in individual organizations. Much more could be done along the lines of more scientific distribution and the anticipation of demands in the manufacture of stock. An important thing in this connection, however, is the fact that in most industries a contract for goods or service is a mere "scrap of paper." Especially in the industries where the style factor exists, contracts are cancelled in case of late though timely deliveries or upon the slightest pretext of any kind. This is often done for the purpose of leaving the manufacturer with unsold stock which he must sell at prices often below the cost of production so that the same or similar goods contracted for in advance are bought at a much lower price. This is a very disturbing factor in the situation. It often forces original prices up higher than they would normally be and makes the manufacturer very cautious about producing goods in advance.

As to other matters pertinent to the question, I will only touch upon them as they have been presented in greater detail before by others as well as by myself. We of course know that unscientific employment methods at any time give rise to conditions aggravating unemployment. Especially is this true because of the fact that the average manufacturer has not accurate knowledge of the amount of labor it takes to do a given job and consequently has a larger payroll than is essential. This "inflated working force" is immediately reduced at the slightest easing off of demand. Restrictions in individual output, especially in normal times and times of rising costs and prices, by individuals or by reason of labor organization rules or methods, are factors contributing directly to unwarranted rise in prices and consequent dropping off in business and employment. On the other hand, restriction of output by employers, especially those who control raw materials, or the first processes of raw materials, such as is constantly going on, and especially in times of declining prices in order to limit the supply and consequently exaggerate the demand and increase prices and profits, should be dealt with drastically both as a preventive and remedial measure. Reports such as mentioned above should be compiled in a way so as to cover this item and means should be worked out to eliminate this practice.

Employment in public works as well as in privately controlled businesses should be organized and worked out along lines suggested above. We have great need of a Federal-controlled employment service with branches in all industrial and agricultural centers for the proper distribution of labor and the spreading of employment and employment information. Standardization of output of any one unit of an industry in regard to style and other things will put business in a position where cost can be lowered and more manufacturing can be done for stock and in anticipation of demand. Another thing that comes up in this connection is unemployment insurance. Insofar as unemployment insurance can be worked out so that it is chargeable directly to industry and to an organization in proportion to its percentage of regularization, it can be considered a preventive measure. Otherwise, at best, it is merely an alleviation of the results of unemployment which generally can be prevented.

As regards remedial measures applicable to the present situation I might quote Colonel Leonard Ayres who likens a situation like the present to a log jam. He suggests that if a key log is pulled out of the jam an even flow will again take place. It has been suggested, as you no doubt are aware, that in the present instance the settlement of railway claims against the government might put the railways in the market again for materials and supplies. They, of course, are the biggest factor in the steel industry, which seems to be in the middle west, at least, the key industry to the situation. It is further suggested that the government might expedite the settlement of other measures affecting commerce and industry such as taxation. The psychological effect of settlement may be a larger factor than the actual concrete results of such settlement.

I have not tried to cover all phases or points of view of this important question. I have merely tried to outline for your consideration some of the ideas that I thought might be of importance in the solution of the unemployment problem. There is no problem of greater importance to industry from the business as well as from the social point of view, because unemployment is the result not only of business, but our entire economic structure gone wrong. Like any other case of illness, the cure is not nearly as important as prevention. I hope, whatever else may be done, that effective means will be established to keep the problem of unemployment before the community during times of plenty and that means will be established for the education and assistance of all in the necessary steps for the prevention of periodic recurrence of these cycles of depression and unemployment.

SALES QUOTAS

A REPORT ON TERRITORY VALUATION[1]

By Charles P. Staubach[2]

I. INTRODUCTION

IT is not the purpose of this report to convert to the quota idea any one who is convinced that it cannot be applied to advantage to his particular business; neither is it intended to intimate that there is any fixed set of rules or methods that can be applied to any and all lines of business in establishing territory valuation.

The methods and ideas presented are the outcome of a practical experience that is country wide and have been checked up by repeated personal visits to every part of the United States and Canada. The subject should be entitled "Territory Valuation" rather than "Sales Quotas," as all correct quotas require proper analysis of the selling possibilities of the field.

To make this presentation comprehensive, I must start with the country as a whole, and work down to the individual selling unity. But I shall delay you just a little, in order to give a vision of quota application to the smallest unit, the individual salesman.

1. *The Individual Sales Territory*

I am a salesman. I have a specified territory. I want to earn as much money as possible. But I also want to establish a record that will assure me greater opportunities as time goes on.

How much business should I produce? Where is the line between a fair and an unusually good performance?

If my worth is to be judged merely by volume of sales, may I not suffer by comparison with men having better territories? If I am a leader, is this due to my work or to a superior opportunity? Have I a fair territory assignment or is it based on a guess or chance, as to its boundaries? Am I getting maximum results? Can I be sure of anything except that I am making a living or better?

To some extent I may be at sea, with no charted course, without definite destination.

By contrast, suppose our territories have been scientifically analyzed, the possibilities of every section constituting a known quantity. A fair sales valuation has been established for every block or county. Territories of fairly equal values have been established.

Suppose that under these conditions I handle, say, three distinct lines of goods, constituting the company's product; that the relative possibilities of sale of each of the three lines have been worked out. In my territory I am charged with the share, of the A, B, and C lines, that should be sold; my sales quota is a definite amount of business, so divided as to be secured during the year—this year's quota has been properly apportioned among the various months.

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[1] Presented at the Springfield, Mass., meeting of the Taylor Society, Feb. 25, 1921.

[2] Glen Ridge, N. J. Formerly General Sales Manager, Burroughs Adding Machine Co., Detroit.

Under these conditions I know each month what is expected of me as a minimum. I know what mark I have to pass to become the efficient producer of the sort that my company wants to locate among its field force.

2. *Illustrating How Quota Works*

Applying the quota idea to a fictitious January record: My sales are expressed in "points," each $25.00 of value representing one sales point. A $300.00 sale means 12 points.

Suppose that in January my sales amount to 220 points; while Jones, who has the adjoining territory, has also sold 220 points.

Have we done equal justice to our opportunities? Are our records good, bad, or indifferent? Without territory valuation, who knows?

All we know is the record:

Sold, January, Staubach	220 points
Sold, January, Jones	220 points

Assume, however, that we *have* quotas, such as:

January quota, Staubach	190 points
January quota, Jones	240 points

The difference represents the variation in the sales possibilities of our territories.

Now read the record:

	Quota	Sales	Per Cent
Staubach	190	220	115
Jones	240	220	92

Observing this record, you must realize that while without quotas our results are on a par, my work in January is, through the quota system, demonstrated to be better than that of Jones to the extent of 23 per cent.

This record shows my company that Jones is due to speed up; also, incidentally, it shows me that my margin over quota is not so large but that it is up to me to produce a better March, April, etc.

Each territory has its own measuring stick, based on the same known factors. Our results are indicated on our own scale or possibilities and not on a general average. Would I not, as a salesman, prefer to work where quotas are the thermometers of progress, in territories the values of which have been accurately measured as part of a scientific valuation system?

Without quotas, or correct sectional estimates of some kind, each salesman would be judged largely by the money value of the business he produces. The largest producer would be considered the most valuable, although he may not be doing half as good work as another, located in a territoy less fertile.

3. *Sales by Lines of Product*

To carry this illustration further, remember that I am selling three separate lines of goods. Am I doing equal justice to them all? Here is my January record:

Sales A Line	100 points	$2500.00
" B "	80 "	2000.00
" C "	40 "	1000.00
Total	220 points	$5500.00

My A record looks good, B slightly less so, and the C sales appear very poor. But, just a moment! The "C" line is a new product; we do not expect its sales to reach those of the other lines for some time. But how good or how bad *is* the C record, considering this alibi?

Introducing quotas, these may be: A, 80 points; B, 80 points; C, 30 points; total 190. Applying the quota measuring stick my January record reads:

	Quota	Sales	Per Cent
A	80	100	125
B	80	80	100
C	30	40	133
	190	220	115

It is very evident that if these percentages continue it is my B and not my C sales that need special attention.

All records should be accumulative so as to observe readily the performance of several months rather than of a single month that may be exceptional. Furthermore, the month to month tendency is important.

"Tendency Charts" are of the greatest value. Records should be maintained to cover yearly periods, as a rule. To the record of the twelve months last elapsed should be added the current month, deducting the same month of the previous year. The result from month to month, displayed preferably on graphic charts, shows definitely where we are heading. Such tendency charts can be arranged both as to volume and as to quota percentages.

II. THE NATURE AND PURPOSE OF QUOTA

Quotas are closely related to territory valuations. As a matter of fact, reasonably accurate territory valuation is of first importance as to basis for assignment of the selling force and distribution of product as well as the establishment of a measuring stick by which the results produced by various selling agencies can be judged with relation to comparative opportunity as well as comparative volume. Territory valuation is the foundation of the sales quota. Having secured comparative territory valuation, the next step is to assign to each unit of selling territory its proper proportion of the task.

The proportion of the entire volume of sales desired, that is assigned to each selling unit, is the sales quota of that unit. To judge rightly the results produced by each unit, it is necessary to compare its results with its quota, and then assign it to its proper place strictly on a basis of percentage of sales quota secured.

"Master Task" is a somewhat scientific term indicating what may be otherwise described as the "quota of the sales department."

The quota idea starts at the point where a businuess enterprise realizes the desirability of a definite estimate of the task in hand. Applied to sales, it is necessary to place a reasonably accurate estimate on what is to be expected of the distributing force for a given period. This estimate must be in proper relation to manufacturing possibilities as to volume, to the merit of the product, and its market, based on experience or research, or both. Distribution may be through dealers, direct branches or both.

Assuming that the concern has a clear idea of the volume of business that it can reasonably expect to secure and take care of, the company first establishes a total company sales quota. This may be the amount it confidently expects or hopes to sell, or it may be arbitrarily placed above or below that volume. If placed above, it is on the theory that the higher we aim the greater are our results likely to be. But we must not discourage the average selling unit at the outset by setting a mark which only a part of the force can hope to reach. If placed below, it is because quota is to be regarded as a minimum to be exceeded as far as possible, and not in any sense a maximum.

Perhaps the best basis is a quota beyond the previous year's results but below the current year's expectancy. When men know that this is the basis, they realize that the company quota is a minimum; that it is not unreasonably above the previous year's actual results, and that they have every chance to make better than quota. Every man likes to reach and then exceed a 100 per cent estimate of his powers and possibilities. No one wants to feel that quota can be reached only by terrific effort or unusually favorable conditions. A fair distribution is of utmost importance.

Proper territory units may consist of states, counties, townships, towns, or city blocks, singly or in groups. If our dealers or branches are so few in number that each covers one or more states, we need not go beyond determining what part of the company quota should be allotted to each state; but, even in this case, it is important to know that not only each state, but also each part of each state, is being properly covered as indicated by results secured.

For this reason and because state lines are not good agency dividing lines, it is desirable to consider parts of states rather than states as a whole. In dividing the state, some kind of geographical unit that is generally recognized is necessary, especially in order to secure dependable statistical information. We find the answer in the "county" unit which all states recognize.

In assigning territory to dealers or branches, it is customary to consider which counties are most readily accessible to each agency, irrespective of the state in which the counties happen to lie. It is rarely necessary to split counties between agencies although there are a few desirable exceptions to the rule. Taking it as a settled fact, therefore, that the county forms the ideal unit, we have only to assign to each county its proper share of the company quota.

It is, of course, impractical to give all counties an equal task. They differ too widely in possibilities. New York County, New York; Cook County, Illinois, and many others, are empires in themselves, while localities like Pike County, Pennsylvania, are barely above zero in the salesman's chart.

Admitting, therefore, that we must establish approximations of the relative productive value of counties of varying size, location and composition, our task is to find bases of comparison. Up to this point all that has been related applies to practically any line of business; beyond this point, the nature of the product, and the composition of the sales force and of the factors that constitute the market must be considered.

If the company is a going concern it may have one or more items of information available that are largely denied to a new concern, and particularly one handling a novelty.

Various factors that may be used in establishing territory valuation and quota are as follows:

a. Single Factors

1. Past Sales
2. Product in Use
3. Industry Past Sales
4. Industry Product in Use
5. Population
6. Business Enterprises

b. Composite Factors

Past Sales	50%
Population	20%
Business Enterprises	30%

Product in Use	50%
Population	20%
Business Enterprises	30%

Industry Past Sales	50%
Population	20%
Business Enterprises	30%

Industry Product in Use	50%
Population	20%
Business Enterprises	30%

Past Sales or Product in Use	50%
Business Enterprises	50%

Or any other combination of factors and of ratios.

In some cases one factor only may be sufficient, consisting of our own past sales or product in use; past sales of the industry or its product in use, if available; population, or business enterprises, etc.

Past sales or product in use are necessarily matters of statistical records. If not available, they would have to be estimated or disregarded.

Population is a matter of public record. This can be rated at par for whites and relatively for Indians, Chinese, etc.

Business enterprises may include every one in business, or only the selected lines that can use or handle our product.

If more than one factor is desired, each should be figured as though no other factor is to be used, and the result discounted by an arbitrary percentage as in the illustrations covered by the foregoing table.

1. *The Past Sales Factor*

Taking first a going concern, it knows or should ascertain from its records, its sales by counties, in the past, as to volume, classes of goods and money value. If the article is something that is consumed, such records must necessarily cover past sales over given periods.

Having county records as to past sales or quantity in use, as to quantities or money value, as best fits the product, these are divided into the classes of goods into which our commodities are habitually grouped.

Sales Quantity or Money Value County Totals	Class A	Quantity or Value
	Class B	" " "
	Class C	" " "

Combining county records in each state we build up a national total, in each class of goods, thus:

Total of all counties equals state total.
Total of all states equals national total.

Assuming that the national total past sales for the period considered, of our entire product or of one of the several groups of our product, handling each separately, may be represented by the fictitious value of 100,000 points, and that our estimated or desired sales for the coming year is to the value of 25,000 points, it is obvious that we must sell one point next year for each four points previously sold. Our ratio is 0.25, secured as follows:

Total U. S. Sales 100,000	Total U. S. quota 1922 25,000	Quota Ratio 0.25

Apply this ratio to the individual county, we secure its quota readily, this way:

Smith County Past Sales 200 points	×	Quota Ratio 0.25	equals	Smith County Quota 50 points

In other words, the quota of each state, county, or other unit will be the point value of its past sales, in any one commodity group, multiplied by 0.25, the figure that represents the ratio between the national past sales of this group to the national quota decided upon.

If the commodity is one of comparatively long life and use, such as machinery and most office specialties, then one more valuable factor is secured, based on a record of what is actually in use, after eliminating units taken in exchange for new equipment.

In this case, if the total product in use were valued at, say, 50,000 points, each locality would have to produce one-half of the value of the product now in use within its boundaries.

Illustrating this:

Total in use in U. S. A. 50,000	Total Quota 1922 U. S. A. 25,000	Quota Ratio 0.50

Applying this ratio to the individual county:

Smith County In use 150 points	×	Quota Ratio 0.50	equals	Smith County Quota 75 points

It will be noted, in the illustration given that the quota of Smith County may be 50 points, based on past sales, and 75 points, based on product in use. If both factors were to be used and considered of equal value as a guide, the composite quota would be 62½ points. This would vary if one factor was to be given a relatively higher rating as a guide than the other. This idea applies as to any two or more factors. The two just noted would not be both used, as a rule, the "past sales" applying properly to commodities that are consumed, and the "product in use" to permanent equipment.

Some concerns may also have a close line on past sales of all its competitors and on the quantities of competitor's merchandise that is in use. In this case it can practically establish an "industry quota," and assume what it considers its proper share. This latter factor can be largely disregarded, however, as few concerns have records of the accomplishments of the entire industry, or at any rate equally dependable data as to all state or county units.

In assigning territoy according to past sales, or merchandise in use—which is to some degree the same thing in another form—a quota can be established based on this single factor, if desired, disregarding all others. In this case, dividing past sales into their proper counties, we have a record of the percentage of the whole which each county has secured, and can assign the company quota for the current year in the same proportion, on the reasonable theory that "what has been done, can be done again."

If this information is available and the concern willing to consider this a sufficient guide for the immediate future, it can readily establish county quotas with little difficulty and assign its counties and their quotas to proper salesmen, based on accessability and opportunity for results. Quotas of various units cannot be equal. Percentage secured rather than volume, gives a valuable line on merit of performance.

Some other factors are necessary in cases where past records are not available. Also, where they are available, additional factors are useful. For instance, it is of extreme importance to consider not merely what each county has produced, but also what prospective purchasers each county contains. Otherwise a county in which no sales have been made in the past would have no quota at all.

However, the past sales factor, if obtainable, should be retained, as the selling resistance is not as great in a cultivated territory as in virgin field, with rare exceptions.

2. *Population as a Factor*

In estimating possibilities, the nature of the product again must be considered. If it is something that everybody can use, then the population factor is of value.

It is a very simple matter to secure the population of each and every county in the country, and if the population factor only were to be used, it would only be necessary to assign to each county the same share of the company quota that it contains of the country's population, in this way:

Total Population U. S. A. 100,000,000		Total Quota U. S. A. 25,000 points		Quota Ratio .00025
Smith County Population 200,000	×	Quota Ratio .00025	equals	Smith County Quota 50 points

Census tables show the population other than whites in each state, as a guide to any arbitrary deduction that may be considered desirable.

3. *Composite Sales and Population*

If a concern can in this way establish a quota on one hand based on past sales, and on the other hand, based on population, and desires to use both factors, it has only to consider the relative value of the two factors, and give each its share of the total company quota, in this way:

Factor A—Past Sales.

U. S. A. Total 100,000	1922 Quota 25,000	Past Sales Ratio 0.25

Factor B—Population.

U. S. A. Total 100,000,000	1922 Quota 25,000	Population Ratio .00025

If we decide that the relative value as a guide is, say, past sales 40 per cent and population 60 per cent, we divide our quota so that 40 per cent of 25,000 points or 10,000 points is to be based on past sales and 60 per cent of 25,000, points, or 15,000 points based on population.

This changes our ratios in this way:

Past Sales Ratio 0.25 × 40% equals	0.10
Population Ratio 0.00025 × 60% equals	0.00015

To prove this:

Total past sales 100,000 × 0.10 equals	10,000 points
Total population 100,000,000 × 0.00015 equals	15,000 points
Total Quota	25,000 points

Applying this to Smith County:

Past Sales 200 points × 0.10 equals	20 points
Population 200,000 × 0.00015 equals	30 points
Composite Quota, total	50 points

All other composites would be worked out in the same way based on the actual count applying to each county as ascertained from dependable figures.

4. *Business Enterprises*

A third factor may be "business enterprises." For instance, if the appliance is one that could be used in any store or office of any size whatever, a quota can be assigned based on the number of concerns in business in each county. This count can be secured from concerns who make it a business to supply such statistics. If certain kinds of business can use the commodity and others cannot, the lists secured may cover any lines of business selected, or eliminate any that are specified. In this way, the company quota can be divided among counties in proportion to the concerns in business that each county contains. This can be the sole factor or can be used as a part factor, with others.

The formula to be used would be:

Total U. S. A. Enterprises	Total U. S. A. Quota 25,000	Quota Ratio 0.25
Smith County Enterprises 3000	Quota Ratio .025	Smith County Quota 75 points

5. *Business Enterprise Ratings*

As a further refinement, the business enterprise lists last referred to can be divided according to "rating" and certain rated groups given a larger valuation than others. If a formula is decided upon, a line can be secured on the total value of the business concerns in each county, as prospective buyers or distributors, based on their business ratings.

To illustrate rating groups:

Group 1—Over $10,000.
2—$3,000 to $10,000.
3—Below $3,000.
4—Not rated.

To secure the relative value of such groups it is necessary only to have county sales records, showing not merely sales as a whole, but also divided into these four or any other standard groups.

Having secured the total number of concerns, or "business enterprises" in the county, dividing the count into these groups, their relative value is secured by dividing the total in each group into the money value of past sales to this group, thereby producing group ratios of valuation.

6. *Classes of Business*

A still finer distinction can be drawn by determining arbitrarily or, better, by past experience, the relative sales value of concerns engaged in different lines of business, with or without reference to ratings as well. By placing a fixed valuation for instance on a wholesaler rated above $10,000 as against a wholesaler rated below $3,000, or on a manufacturer rated between $3,000 and $10,000, and a retailer not rated at all, a very fine estimate can be made of the value of each potential market.

This fixed valuation is secured by division of the enterprise total of each group into the past sales to that group. The result may be something like this:

Groups		Enterprise Value
A	Banks No. 1—over $5,000,000 deposits	125.
B	Banks No. 2—$1,000,000 to $5,000,000 deposits	30.
C	Banks No. 3—$300,000 to $1,000,000 deposits.	10.
D	Banks No. 4—below $300,000 deposits	6.14
E	Financial other than banks	1.39
F	Government, City, County and State Offices.	.96
G	Public Service Corporation	3.92
H	Manufacturers rated over $10,000	2.13
I	Manufacturers rated $3,000 to $10,000	.54
J	Manufacturers rated below $3,000	.069
K	Manufacturers not rated	.75
L	Wholesalers over $10,000	6.22
M	Wholesalers $3,000 to $10,000	1.78
N	Wholesalers below $3,000	.84
O	Wholesalers not rated	2.01
P	Retailers over $10,000	.75
Q	Retailers $3,000 to $10,000	.23
R	Retailers below $3,000	.092
S	Retailers not rated	.43
T	Miscellaneous over $10,000	5.14
U	Miscellaneous $3,000 to $10,000	2.26
V	Miscellaneous below $3,000	.19
W	Miscellaneous not rated	.542

Or any other desirable groups, such as garages, department stores, drug stores, etc.

Of course, these valuations are absolutely fictitious. Each concern must work out its own groups and values, or have it done by some one who knows how.

To use this plan it is necessary to secure the enterprise count of each town containing business enterprises.

This can be secured from concerns specializing in business lists and enterprise counts.

It is necessary only to decide on the desired groups, and supply proper forms on which to enter town totals.

The count of rated groups is secured from Dun's or Bradsteet's.

Some 30 additional reference books can be used, containing classifications not included in Dun's or Bradstreet's, such as Building and Loan Associations, Electric Light Companies, Gas Companies, Water Companies, Physicians, if desired, etc., etc.

Having secured town totals these are grouped according to counties, and states.

The enterprise valuations are extended only on county totals, thus minimizing the labor.

7. *Possibility of Additional Factors*

Other factors, no doubt, are being used or can be suggested. The foregoing will serve as suggestions and as a basis for discussion, and it is hoped will lead to the narration of other plans that are in use or under consideration that can be made valuable on their own merits or in connection with some of the factors described.

III. APPLYING COUNTY QUOTAS

Having established county quotas based on single or composite factors, applied to counties, let us trace their application to agencies, branches, dealers and salesmen.

Any agency, branch, dealer or salesman covering one or more counties would be assigned the total quota of his county or counties; viz:—

Agency or Branch or Dealer or Salesman	carries total quota of counties assigned as a territory.

If the concern makes several classes of goods, it is, of course, assumed to have assigned quotas in each class, instead of just sales as a whole. This is important to assure proper attention to the entire line.

It is, of course, quite possible that the agency, branch, dealer and particularly the salesman, may have less than an entire county. The quickest way to subdivide a county is to take out and handle as a separate unit, each city of any size that the county includes. The remaining towns are included in townships, and each county, therefore, consists of the cities and townships it contains.

Picturing this division:

Smith County	(a) Agency, dealer or salesman	List of Cities List of Townships
Divided into	(b) Agency, dealer or salesman	List of Cities List of Townships

As all the county statistics were built up from the figures on record as to each town in the county, it is a simple matter to secure the figure on each factor that constitutes of its county total the share of each city and township. This to be multiplied by the fixed quota ratio of that factor.

In this way the county quota is prorated to its cities and townships, and the quota of each city or township assigned to the branch, dealer or salesman assigned.

To secure quotas:

Smith County } A Agency Count of Towns × Fixed Ratios
Total Quota } B Agency Count of Towns × Fixed Ratios

As some townships are somewhat scattered as to population, without towns of any size, it is desirable to group neighboring townships into "blocks" for statistical purposes. This, however, is merely a refinement of the entire plan.

IV. DIVIDING LARGE CITIES

Finally, we come down to the city that is large enough to be divided among two or more dealers or salesmen. If each is assigned to a certain definite part of the whole city, the city's quota can be divided proportionately. How to properly divide a city is an art in itself.

The answer is what is known as the "blocking system." This requires the securing of statistics on each city square and grouping the less productive squares into what are termed "blocks."

The process to follow is:

(1) Secure a large city map.

(2) Count the past sales, product in use or enterprises in each block.

(3) Establish an average block valuation.

(4) Combine blocks of neighboring blocks of small valuation to produce a "business block" of the average valuation established.

(5) Multiply count of each "business block" by the fixed ratios.

(6) The result is the block quota.

(7) Each salesman's quota is the combined quotas of the business blocks assigned to him.

(8) Total quota of all blocks is balanced against the city's total quota.

One statistical or sale "block" may contain one city square only or several. It has its individual block number and is a permanent unit which is small enough to prevent the necessity of being broken up at any time. Fixed blocks are desirable for the purpose of comparative records. In this way, the dealer or salesman in a large city is assigned certain blocks just as the county dealer or salesman is assigned certain towns, townships, blocks of townships, or counties.

Quotas for customers can be established if the business is such that it has a limited buying field in each locality. Having established a quota for the county or subdivision, it must be more or less arbitrarily divided among the available customers. In some lines of business dependable information may be procurable.

V. DETAILS OF SECURING QUOTAS

As to methods of securing quotas, this has been covered to some extent in the foregoing. To recapitulate:

The sources of data for the computation of quotas may include the concern's own records of past performances according to styles and classes of goods, as to locality, and in some cases as to individual established dealers. Other sources are the national census figures as to classified population, financial reference books, such as Dun's, or Bradstreet's, to which must be added published lists covering, for instance, public service corporations, building and loan associations, and perhaps thirty other lines not listed or rated in the financial reference books, but which are available.

Count and classification of enterprises can be purchased from concerns who make it a business to supply them, or an actual count can be made by the company itself. In either case, several concerns, not necessarily competitive, can share certain lists and apportion the cost, which might otherwise be considered prohibitive.

It is possible not only to supply every branch, dealer, agency or salesman with the established quota for the territory assigned, but to go so far as to supply not only the quota of every one of his towns, large and small, but also the actual name and location of every prospective buyer included in the count, charged to such territory. It would rarely be necessary to go as far as this, but it is possible—and being so, gives a fine sense of satisfaction that the quotas are right and can, if necessary, be explained and defended.

As to results that have been secured from the quota idea, there are many concerns that attribute a large share of their success and of their steadily increasing volume to the use of the quota plan. Such concerns would never consider abandoning it and every man familiar with the operation of the plan, who has later transferred to any position of importance in another concern of similar or totally different market has promptly started a quota plan with gratifying and valuable results.

Perhaps the greatest results are the effect on the salesman himself—and consequently on sales production—proper valuation of the territory involved, and the feasibility of properly establishing and readjusting territory boundaries and the assignment of proper selling talent to units of proper location and size. The plan is a measuring stick, the value of which increases steadily with experience.

VI. APPORTIONING SALES OVERHEAD

A new note of great potential value, particularly under present business conditions, is related directly to quota valuations of territory.

The manufacturer does not have to be shown the necessity of determining, accurately, the cost of manufacturing the various articles that make up his line. It is of equal importance that he should know not merely the cost of marketing his product, taking the field as a whole, but also just which selling agencies, branches and territories are making money for him and which are not. This can be done only by assessing in a statistical way, upon each selling unit, its proper share of the entire cost of marketing. In other words, distributing all overhead not included in manufacturing costs.

This distribution should not be made, as is so often done, on the basis of sales produced; otherwise an incorrect conclusion is arrived at as to the extent to which each selling unit is profitable or otherwise. To illustrate this, let us say that of two branches covering territories of approximately equal value, one is selling twice as much as the other. If we charge the first with twice as much of the general overhead, our conclusions will not be correct. Otherwise, in case one of these units sold nothing at all during a certain period, it would be charged with no general overhead whatever, concealing the actual loss and the other would be penalized by having to absorb an excessive overhead, reducing its showing as to actual profit earned.

Penalizing successful selling units by a statistical distribution of general overhead, based on sales does not locate the real source and extent of territorial profit and loss.

The proper method to ascertain the territorial profit or loss would seem to be only by crediting each unit with the entire revenue it produces and securing the net revenue by deducting its direct expenses, such as salaries, commissions, office expense, etc., etc. Next, by charging in a statistical way, against it, its proper share of all items of Home Office expense, field supervision and in general all expenditures and costs not already included in manufacturing overhead or agency expenses. Having done this, the share of this general overhead, apportioned to the unit, being deducted from its net revenue to the concern, indicates the extent of its actual marketing profit or loss.

What percentage of the total general overhead should be figured against each unit should be determined not by its sales, but by the sales valuation of the territory it covers; in other words, its sales quota. Quick figures can thus be secured, as the quotas of all units being fixed, are known long before sales figures are available, and as soon as the overhead for a month or other period has been ascertained, it can be at once distributed ready for application against the revenue produced for the period immediately on that being recorded.

This is an additional use for sales valuation or quota statistics that has not been realized to the extent it would appear it should be in business generally. The plan will be quite new to many and could no doubt be discussed to good advantage at a future meeting of the Taylor Society.

IN past years a great deal of mysterious hocus pocus has been made over salesmanship and salesmanagement. It has popularly been supposed to consist mainly of personal magic—certain inborn qualities and certain charms and powers of personality which constitute something of an individual secret—something that "a man either has or hasn't got." Naturally, therefore, a surprising lack of organized knowledge of salesmanagement has existed. Salesmanagers hoard their knowledge like doctors in the old days when medicine was merely the practice of "black art." . . . Successful salesmanagement and selling methods have been held to be business secrets to a greater degree than any other activity of business. . . . This has actually retarded the development of salesmanagement, and severely limited the number of able sales managers. There is now, and will be for some years to come, a dearth of really able sales managers, skilled in both the modern requirements of practical knowledge and of the deep-reaching matters which they will have to consider. (J. George Frederick, *Modern Salesmanagement,* pp. xi, xii).

ABSTRACT OF A PRELIMINARY REPORT
of the
COMMITTEE ON THE SALES QUESTIONNAIRE[1]
PRESENTED AT THE ANNUAL MEETING OF THE TAYLOR SOCIETY
NEW YORK, DECEMBER 3, 1920

FOREWORD

A RESOLUTION passed at the Sales Executives' Conference of June 25 called for the appointment of a committee which should secure, through a questionnaire addressed primarily to the manufacturing organizations represented, data concerning current practice in organization for and the conduct of sales operations, with reference particularly to the coordination of selling and production. The committee is made up of the chairman of the other committees and two members at large, and to it has been given the additional duty of acting as a planning committee for the work of all committees established by vote of the conference.

Painstaking work by a sub-committee resulted in a tentative questionnaire which was so comprehensive that it was concluded not to send it out without most careful working over. It was decided, however, to send out immediately, to secure data for guidance in working over the comprehensive questionnaire, a brief set of questions which would yield evidence as to whether in practice there is special effort to coordinate sales and production and recognition of a functional distinction between sales engineering (planning, merchadising, etc.) and the conduct of sales operations. The following is a report on this preliminary questionnaire.

This questionnaire was sent to the firms represented at the June conference—fifty-two—and at the time of the preparation of this report for printing twenty, or about two-fifths, had reported.

It should be observed that these firms are fairly representative of the best in general management rather than of the average. There has no doubt been a double selective force at work; those attracted by such a conference as that of June 25 would be representative of energetic and inquiring firms; of that group, those who had data available for prompt response to the questionnaire would be representative of firms which have the habit of inquiry and self-analysis.

They represent a wide range with respect to the nature of the products, the quantity and value of output, the number of personnel engaged in factory operations and the number engaged in marketing operations.

The Committee believes that the results of the inquiry, although meager, are not without value, especially as establishing a "toe-hold" for the first steps towards scaling a veritable precipice of difficulties ahead.

RESULTS OF THE PRELIMINARY QUESTIONNAIRE

I. SALES ADMINISTRATION

The function of determining general sales policy; of approving general plans and schedules which have been worked out and proposed; of settling (by the exception principle) matters which cannot be settled by those executives more directly concerned with sales engineering and the conduct of sales operations.

1. Where in your organization is the final authority for determining or approving a sales plan or campaign? (such as Directors; President; General Manager; Committe of department heads,)

Four replies state that this responsibility is in the directors; four that it is in an executive committee of directors who are heads of operating departments; one that it is in a committee of operating department heads; one in an executive committee; one in a President; one in a Vice-President in charge of sales; two in the General Manager; one in the General Sales Manager; one in the President and General Manager; two in the President and Sales Manager; one in the Sales Manager who carries exceptional matter to the General Manager; one reply states "no organized method—we 'cut and try'."

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[1] Reprinted from Vol. 5, No. 6, Dec., 1920. The demand for that issue has exhausted the supply, and because of evidence of a continuance of the demand, it has been decided to republish the sales reports.

2. Do plans come to the determining authority (accompanied by necessary information) from some special individual or department of your organization? (Such as Sales Engineering Dept.; Merchandising Dept.; Merchandise Manager; Sales Research Dept.; Promotion Dept.; etc.)

Six replies state that such plans come from special departments (Sales Engineering, Sales and Planning, Merchandise Council, Sales Statistics); three that such plans come from various sources; one from a committee concerned principally with the financial budget; one as a consensus of opinion of department heads; three from the Sales Manager; one each from Merchandise Manager and Asst. Sales Manager; three state that there is no organized information sent to authority determining sales plans.

3. Do these plans come to the determining authority for its consideration and approval in the nature of definite schedules (a) which outline a sales plan or campaign only; (b) which outline a coordination of sales, production (or purchasing) and financial actions involved?

Eight replies state that plans aim at complete coördination of sales, production and finances; one that such coördination is limited; one that such coördination is chiefly financial; three that a sales plan only is attempted; three that sales plans are made, with such a rough checking against factory capacity as the General Manager or Sales Manager can make without special detail information; two that there are no definite sales plans.

II. SALES ENGINEERING

Also called Sales Planning; Merchandising; Merchandise Control; Sales Research; Sales Promotion; Sales Development; etc. The function of devising sales plans for consideration of the ultimate sales-policy-determining authority, involving the study of markets, old products, new products, competition, production capacity, etc.; involving also possibly the preparation of master schedules embodying the sales plan.

1. Do you recognize the devising of sales plans as a function distinct from actual selling?

Interpreting this to mean general plans and master schedules, seventeen replies state that this is a distinct function; three that it is not.

2. Does your organization provide for a department or staff which is responsible for the function of devising sales plans? What is the name given by you to the department?

Nine firms state that they have no such separate department or staff; one that such a staff is being organized; ten that the function is recognized and provided for by special departments such as Sales Engineering, Sales Statistics, Sales Promotion, Sales Planning departments; one by a committee of the Directors consisting of department heads; three by special executives; one by outside experts.

3. Does the sales engineering or planning department, in its research, study: (a) markets; (b) old products; (c) new products; (d) competition; (e) plant capacity?

Of those firms which make special provision for sales planning, eight consider all of the phases of the problem; four additional consider all except plant capacity; five firms report that these matters are taken into consideration by the General Manager and department heads; five state specifically that no special study is made of them.

4. Does the sales planning department limit its activities to research and reports; or does it work out specific written plans in the nature of master schedules which provide for coordination of sales, production and finance?

Five firms reply that in addition to research, master plans and schedules are prepared which coördinate sales, production and finance; one that such work is just beginning; one that master schedules are prepared without much research; one that the scheduling is limited principally to finances; three that the Sales Manager or his associates prepare rough schedules; seven that they can claim neither research nor the preparation of master plans and schedules.

5. If you have not a functionalized sales engineering or planning department or staff, state how you provide for the performance of this function.

Of those firms which do not provide for sales engineering or planning by special departments or staffs, four state that sales planning is a responsibility of the Sales Manager, either alone or in consultation with salesmen; one, of an executive committee which has additional duties; one, of a Vice-President in charge of sales; one, of the President's office; one, of the Superintendent of the Factory who watches shipments, orders and production.

III. SALES OPERATING

The functions of carrying out sales plans, involving the selection, training and direction of salesmen; the working out of detail plans to give effect to master sales plans; the securing and preparation of sales materials; records of sales performance and cost; contracts with customers; etc.

1. Do you recognize this as a function distinct from sales engineering or planning?

Sixteen of the firms replying state that sales operating is recognized as a distinct function; one that it is coming to be so recognized by them; two that it is not so recognized.

2. Is this function performed by a department or unit distinct from that which performs the function of sales engineering or planning?

Thirteen replies state that sales operating is not performed by a separate department; four state that it is performed by a separate department; three that the separation of sales engineering and operating is only partial.

3. Does your sales operating department have charge of the following functions (if not, state what

department has charge of each): (a) selection of salesmen; (b) training of salesmen; (c) direction of salesmen; (d) "educating" of customers; (a) advertising; (f) warehousing; (g) shipping; (h) traffic?

The replies to this question are most interesting. Nineteen state that the selection of salesmen, the training of salesmen, the direction of salesmen and the "educating" of dealers are in charge of the Sales Operating Department, with the exception that one places the training under the Sales Engineering Department and another states that they have practically no training of salesmen and "education" of dealers. Eleven place advertising under Sales Operating; one under a Merchandise Department; one under Sales Engineering; two in a distinct Advertising Department. With respect to warehousing, four place it under Sales Operating; one under Sales Engineering; one under the Treasurer; and four under the factory management. Shipping is placed by only two under Sales Operating; by two under the Treasurer; and by seven under the factory management. Traffic is placed by three under Sales Operating; by two under the Treasurer; by one under the Acounting Department; and by five under the factory management. One reply states that all of these duties are under the General Manager.

4. Does your organization provide for a unit in the sales operating department which takes the master sales plans and schedules and works out detail plans or schedules for carrying out the master plans; i. e., a planning of the actual work of performance?

Ten firms state that they have no such unit in the Sales Department for detail planning. Two state that they have such unit; two state that they have such unit in embryo; one that it is in contemplation. Four state that the Sales Manager makes detail plans for his department.

5. Does this planning of actual performance involve: (a) analysis of master plans as first step in making detail working plans; (b) laying out of detail working plans in the form of written schedules; (c) checking of reports of performance against written detail working plans?

Six firms state that all the phases of planning above indicated are carried out in the Sales Department; one that all three are in contemplation; one that (a) and (b) but not (c) are carried out; and one that (c) but not (a) and (b) is carried out.

6. Does your sales operating department provide for the study of the art of personal selling for the purpose of improving the salesmen's methods?

Twelve firms state that study is made of the art of personal salesmanship; four that it is not; two that it is done superficially; one that it is a responsibility of the Sales Manager.

7. Have you ever made a time-study of a salesman's work, or any kind of job analysis of his work?

Eleven firms reply that no job analysis of the salesman's job is made; five that there is such analysis without time study; three that there is such analysis including time study.

IV. GENERAL

1. What are the functions of your sales manager; does he have supervision of sales engineering or planning, as well as of the selection and direction of salesmen?

Thirteen replies state that the Sales Manager supervises both sales planning and sales execution, even when the routine of planning is performed by a distinct unit. Three state that he is responsible for execution only. One states that he is primarily responsible for execution, but participates in planning by his presence on a planning committee. One states that a Distribution Manager is responsible for both planning and execution and that under him are sales managers who are responsible for execution only.

2. Do you believe the function of sales engineering or planning requires a type of personnel different from that required by the function of actual selling? If so, what are the differences?

Eighteen replies express the opinion that sales engineering or planning requires a personnel different in temperament from that required in sales operating; one that the difference is not great; one that "it does not in our business but probably doee in most." There seems to be general agreement that actual sales operations require the vigorous, motor type of man and sales engineering or planning the engineering, studious, analytic type, and that the latter must also possess imagination.

3. Do you make provision for effective close coöperation between the sales department and the production department in order to keep the output of both departments in balanced relation?

Sixteen firms make serious effort to coördinate selling and production; one is just beginning to attempt coördination; one states that the production manager does the coördinating; one that production and sales seem "practically unrelated."

4. Is the advertising department subordinate to the sales department, or coordinated?

In eleven replying firms advertising is subordinate to the sales department; in six it is coördinate, the inference being that they are coördinated by the General Manager. In one they are practically unrelated, "the sales manager knowing nothing of advertising until he sees copy in publications."

A close analysis of these replies will disclose many discrepancies in details. To make such an analysis and to draw conclusions is not attempted. The tabulated raw material of the questionnaire is presented for what it is worth. In itself it is believed to be worth something; as a guide for the committee and others in preparing future questions, especially as a lesson in the necessity of precise terminoligy and the clear framing of questions, it is of great value.

Also there would be much of greater value were it possible to disclose the replies of individual firms. Of those firms which recognize and in their organizations provide for the difference between sales engineering or planning and sales operating, the replies to detail questions are illuminating.

Willard E. Freeland, Chairman, Winchester Repeating Arms Co., New Haven, Conn.; Charles J. Crockett, Printz-Biederman Co., Cleveland; Charles P. Staubach, Burroughs Adding Machine Co., Newark, N. J.; E. St. Elmo Lewis, Campbell-Ewarld Co., New York; Henry Wood Shelton, Consulting Engineer in Management, Philadelphia; H. S. Pearson, Managing Director, Taylor Society, New York.

ABSTRACT OF A PRELIMINARY REPORT
of the
COMMITTEE ON THE ORGANIZATION AND FUNCTIONS OF THE SALES ENGINEERING DEPARTMENT

PRESENTED AT THE ANNUAL MEETING OF THE TAYLOR SOCIETY
NEW YORK, DECEMBER 3, 1920

FOREWORD

FOR convenience in this report the term Sales Engineering is used as descriptive of the major function discussed. Work of this character, in whole or in part, is now being carried on in organizations under such titles as Sales Technical Division, Sales Promotion, Merchandising, Merchandising Control, Sales Research, Sales Planning, Development Department, etc. It is not important at this time to discuss the name, as the choice of a name will depend upon the organization, personnel and character of the individual enterprise.

This report is designed to stimulate and guide discussion of a comparatively new phase of the work of a distributing or marketing organization. The committee presents a preliminary report only; it cannot hope at this time to present other than a basis for discussion of a subject on which only meagre pioneer work has been attempted.

Every modern sales manager has of necessity been compelled to carry on some or all of the phases of distribution outlined herein. The subject matter is new only in the attempt to segregate into a distinct major function that part of his work which has to do with research, master planning and master scheduling. It is a definite effort to bring recognition of a major function which shall have to some degree the same relation to distribution as that of manufacturing engineering to factory operation.

A point of similarity is the necessity for selecting for the performance of these functions, personnel which possesses the student, planning, creative aptitude and ability. It must be noted, however, that the manufacturing engineering function is concerned almost wholly with tangible things, whereas sales engineering is concerned with both tangible and intangible things. The first is concerned largely with materials and controllable processes; the second with fallible records and uncontrollable human impulses and activities. The first can frequently test its plans on a laboratory scale with minimum expenditure of money and loss of time, employing pure science; the second must incorporate in its plans psychological and economic laws, which are none too well defined and understood and of which the verity and applicability can only be ascertained after considerable loss of time and expenditure of money.

This frank statement of the differences in the certainty of results and the possibility of scientific checks on operation does not destroy the similarity of the relations of the two engineering functions to the operating functions to which they are respectively related, and it does not limit the field or the possibilities of sales engineering. It should serve to emphasize the necessity for the recognition of the engineering phase of sales work as a distinct function and of the intensive use of all the sciences now available, thereby making possible the application of scientific analysis and synthesis to the problems of distribution.

In our present development of manufacturing and merchandising, the cost of distribution or marketing usually far exceeds the cost of production, and the success of the application of scientific management to production points a plain path for management to pursue in its efforts to cut the costs of distribution.

TENTATIVE CONCLUSIONS

1. The conditions or causes which have led to the establishment of engineering and operating as separate major functions in the production of products exist also with respect to distribution and indicate the necessity for the recognition of engineering and operation as major functions in the production of sales.

2. Master planning and scheduling can properly be

considered sales engineering, delegating detailed planning and scheduling as secondary functions of operation. If one concedes that the distributing organization is the one that usually and naturally originates projects involving the whole plant organization, then it becomes obvious that a research and master planning and scheduling function must have a close and sympathetic relation with the distributing organization, hence the choice of the name "Sales Engineering" for this major function.

3. The sales engineering function presents at least three distinct phases:

(a) Field research.
(b) Technical assistance.
(c) Master planning and scheduling.

4. It should be recognized that the major function of sales engineering is to analyze, plan and schedule future projects and that the planning and scheduling of current projects is a function of the operating divisions.

FIELD RESEARCH ACTIVITIES

As a field research function, sales engineering should make its services available for all parts of the plant organization. Some specific things it can usually include in its research activities are:

1. Products:
    - To be added
    - To be eliminated
    - Changes
    - Standardization
    - Present uses
    - New uses
    - Seasonal factors
    - Territorial factors
    - Trade reactions
    - Competitive products

2. Marketing Policies and Methods:
    - Present trade channels
    - Potential trade channels
    - Trade customs
    - Trade reactions
    - Competitors' activities
    - Standardization
    - Containers and packing
    - Quotas and statistics
    - Prices and margins
    - Present markets and volumes
    - Potential markets and volumes
    - Assistance to customers
    - Salesmen's training
    - Warehouse and branch locations
    - Trade organizations

3. General Research:
    - Administrative and management problems
    - Research for all operating departments

TECHNICAL ACTIVITIES

The personnel of sales engineering should be such that it can be of technical assistance to the entire business organization. While sales engineering utilizes and contributes to the entire resources of the business organization, it is essential that no duplication of effort be brought about by the segregation of this major function; in fact, this segregation of sales engineering should invariably tend to diminish duplication of work.

The range of research and other activities involved in sales engineering is indicated by the following synopsis; it is possible that in a large organization some of them may assume such importance as to be recognized as separate functions:

PRODUCTS:
- Types and Sizes
    - Selection
    - Standardization
    - Approval
- Materials
    - Suggestion
    - Approval
- Finishes
    - Suggestion
    - Standardization
    - Approval
- Markings
    - Selection
    - Standardization
    - Approval
- Packing
    - Wrapping
    - Put-ups
    - Containers
        - Suggestion
        - Standardization
        - Approval

ADVERTISING:
- Furnish data on
    - New products
    - Product changes
    - New uses
    - New markets
    - Trade reactions
    - Competitors' activities
    - Prices
    - Trade customs
    - Seasonal factors
    - Territorial factors

SELLING:
- Prices and Margins
- Salesmen's Compensation
    - Investigation of methods in practice
    - Suggestions for alternative methods
- Selling Equipment
    - Salesmen's
        - Design or selection
    - Dealers
        - Suggestion
        - Design
- Seasonal Factors
- Territorial Factors
    - Determine limits and causes therefor
    - Suggest methods of overcoming
- Trade Resistance
    - Determine causes
    - Suggest methods of overcoming

- Economic Factors or Trends
  - Ascertain
  - Report probable influence
  - Suggest methods of overcoming

SALES SERVICE:
- Ascertain deficiencies
- Suggest remedies
- Suggest other service activities

MARKETS OR SALES FIELDS:
- Report changes
- Discover new markets
- Suggest new policies or methods

COMPETITORS' ACTIVITIES:
- Watch and report
- Suggest methods of combating

TRADE ORGANIZATIONS:
- Report activities
- Report probable effect on sales policies
- Determine possibilities of coöperation

LEGISLATION:
- Watch and report
- Suggest necessary action

MERCHANDISE STOCKS:
- Regularly check and report
- Suggest necessary action

PATENTS AND COPYRIGHTS:
- Watch and report
- Suggest necessary actions

STATISTICS:
- Suggest necessary compilations
- Analyze and report changes or trends
- Interpret and suggest necessary action

COMPLAINTS:
- Analyze
- Compile records
- Suggest necessary action

MASTER PLANNING AND SCHEDULING

Sales engineering should become the coordinating function of the entire business. In this field it can relieve the administrative and managerial executives of many of their most troublesome and time-consuming problems. In this activity sales engineering should strive to be months ahead of any of the operating divisions. Only thus can the purchasing, financial, personnel and production divisions have adequate time to plan for their respective activities.

The synopsis below is only to suggest some of the steps in a master plan and schedule. The variations necessary to meet the problems of specific industries are almost infinite.

New Products:
- Plan
  - Types
  - Sizes
  - Materials
  - Finishes
  - Markings
  - Packings

New and Old Products:
- Plan and schedule initial requirements
- Plan and schedule yearly and monthly requirements
- Plan and schedule general marketing policies and methods
- Plan and schedule sales service activities
- Plan and schedule general advertising policy
- State seasonal and territorial limitations
- Plan and schedule general activities of each division affected by project to establish order of work and definite responsibilities
- Plan and schedule warehouse distribution
- Plan dealers' selling equipment
- Plan salesmen's selling equipment

Willard E. Freeland, Chairman, Winchester Repeating Arms Co., New Haven, Conn.; G. H. Kerr, E. I. duPont de Nemours Company, Wilmington, Del.; Henry T. Noyes, Art in Buttons, Inc., Rochester, N. Y.; Charles E. Percy, Joseph & Feiss Co., Cleveland; A. B. Rich, Dennison Manufacturing Co., Framingham, Mass.; Sanford E. Thompson, Thompson & Lichtner Co., Boston; F. R. Wallace, Street & Finney, New York; John A. Urquhart, W. H. McEwain Co., Boston; H. S. Person, Managing Director, Taylor Society.

A PECULIAR compulsion and challenge lies upon modern sales managers—a challenge to grow in personal vision and ability to the new levels called for by the great stimulation of production brought about by the war's abnormal consumption. The new high levels of consumption must not slump; the new high standards of living and purchasing created by war wages must be maintained rather than lowered. . . The sales task before America can only be accomplished by an increase of technical knowledge concerning the difficult art and science of management. This increase of knowledge must be of the broadest kind, and include a sound understanding of not only the more practical parts of sales management, but also study of public temper, psychology and economics. The salesmanship and sales management of pure bombast and sheer energy, so familiar in past years, will not sufficie. (J. George Frederick, *Modern Salesmanagement,* p.viii.)

ABSTRACT OF A PRELIMINARY REPORT
of the
COMMITTEE ON THE ORGANIZATION AND FUNCTIONS OF THE SALES OPERATING DEPARTMENT

PRESENTED AT THE ANNUAL MEETING OF THE TAYLOR SOCIETY
NEW YORK, DECEMBER, 3, 1920

FOREWORD

THIS report is preliminary only. The committee desires that it be clearly understood that it does not feel that it has discovered new principles or new methods, or made new conclusions, relative to the performance of sales operations.

The committee feels that its work has been only a beginning; that much further study and thought is essential; particularly that the aid of many sales managers is now required for the furtherance of its investigations. It is as a challenge to sales managers to offer such aid, and to provide a common starting point for such aid, that this preliminary report is rendered.

The committee believes that its first problem was not to discover new methods, but to attempt to discover the *functions* as represented by existing methods, in sales operating. The report attempts to present in summarized form the functions which seem to be inherently present in successful sales operating.

Except for the assumption of certain major departments this report makes no assumption that the performance of the functions summarized must be by distinct departments, sections or branches of an organization. The report attempts to discuss the problem in terms of major and subsidiary *functions*.

For the benefit of those who were not present at the meeting of June 25, it should be stated that the approach to the problem was definitely set by the following question: "May there be scientific management in the conduct of sales operations corresponding to the scientific management which has been developed in the production department"? Therefore throughout the report selling functions are compared with production functions.

TENTATIVE CONCLUSIONS

1. Selling seems to break down into two major functions, distinct in their nature and in the types of personnel required for their performance:

(a) The making of larger plans for the marketing of a product, involving analysis of the market and the product, the preparation of master schedules, and the coordination of production, financial and selling resources; called Sales Engineering, Sales Planning, Merchandising, Merchandise Control, etc., and in many instances cared for by advertising or selling agencies:

(b) The actual conduct of the selling operations, involving the detail planning of selling operations, the selection, training and direction of the sales force, the detail planning and conduct of selling operations when salesmen are not used, and all contacts with the customer; called in this report Sales Operating.

2. Sales Operating seems to break down into two principal functions:

(a) The detail planning for, the preparation of materials for, and the supervision and control of, all elementary selling processes. (This function breaks down into elementary functions or processes.)

(b) The actual conduct of sales operations in accordance with the planning and control established in 2a above. (This function also breaks down into elementary functions and processes.)

This report is concerned with 2a only; investigation of 2b is to come later.

3. Conclusions 1 and 2 are the result of a study of a variety of selling departments, and present functions which seem to be inherent in selling; they are not, however, recognized by every selling organization and their execution provided for by functionalized parts of the organization. In one organization one or more functions, in another organization other functions, are recognized and defined.

4. Taylor has shown by his work in production that proper results can be brought about only by systematized—not system-ized—work, in which plans,

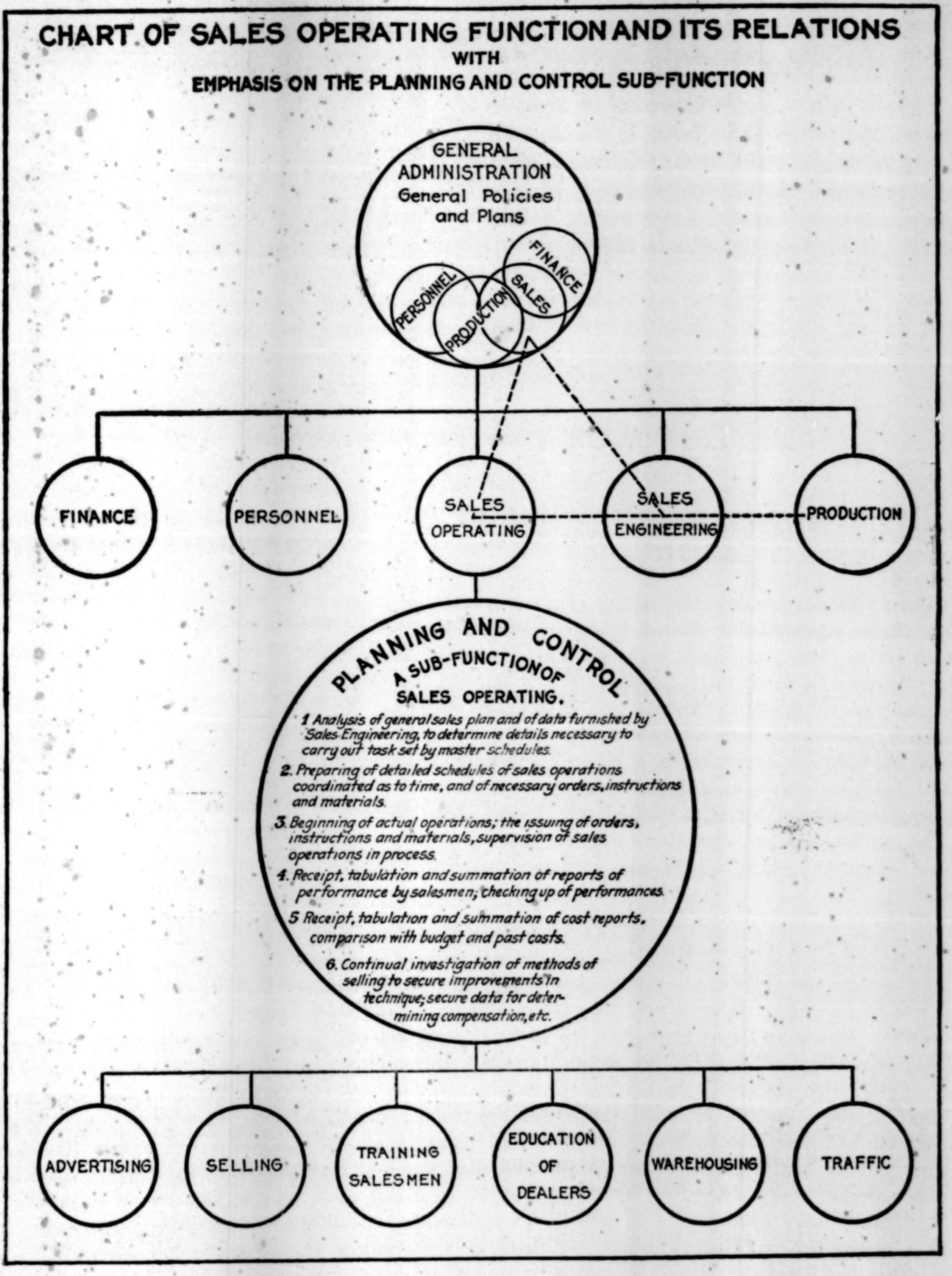

CHART OF SALES OPERATING FUNCTION AND ITS RELATIONS
WITH
EMPHASIS ON THE PLANNING AND CONTROL SUB-FUNCTION

1 Analysis of general sales plan and of data furnished by Sales Engineering, to determine details necessary to carry out task set by master schedules.

2. Preparing of detailed schedules of sales operations coordinated as to time, and of necessary orders, instructions and materials.

3. Beginning of actual operations; the issuing of orders, instructions and materials, supervision of sales operations in process.

4. Receipt, tabulation and summation of reports of performance by salesmen; checking up of performances.

5 Receipt, tabulation and summation of cost reports, comparison with budget and past costs.

6. Continual investigation of methods of selling to secure improvements in technique; secure data for determining compensation, etc.

functions, duties and execution are all clearly defined. This is what your committee desires to see done for selling.

EXPLANATION OF THE CHART

1. *General Administration* determines or approves all general policies and plans, including general sales, production, personnel and financial policies and plans.

2. *Sales Engineering* studies markets and products and recommends to General Administration general or specific, continuous or limited, sales campaigns. Its recommendations, as adopted by General Administration, take the form of general schedules which coordinate selling, production, personnel and financial operations. These general schedules pass to the various operating departments for execution, and constitute the master task for their coordinated execution.

3. *Sales Operating* receives these general schedules, or master task, and proceeds to execution. The first step is planning details of execution and establishing controls for execution; breaking the task up into elementary tasks for performance by functionalized branches or individuals. The elements of planning and control are emphasized on the chart.

After detail operating schedules, orders and instructions are prepared; these pass to those respectively responsible for their execution in detail; advertising, selling, training, warehousing, traffic, etc.

ELEMENTS OF THE PLANNING AND CONTROL FUNCTIONS OF THE SALES OPERATING DEPARTMENT

THE SALES OPERATING DEPARTMENT

PRELIMINARY

Before the first step of actual selling is taken, a sales plan, general or specific, continuous or limited, is approved by the administrative authorities. This plan should have been worked out by some part of the organization, based on a detailed research into market conditions, study of the product, financial and production resources, etc. The part of the organization which has prepared this plan may have been certain delegated executives or a Sales Engineering Department termed as such or perhaps as a "Sales Planning Department," a "Merchandising Department," or a "Merchandising Control Department."

This approved plan takes the form of what may be termed "Master Schedules," which instruct and coordinate production, finance and selling.

SALES OPERATING

Having been provided with the approved general sales policy (master sales schedules) which it may have had a share in formulating, the Sales Operating Department plans its work of execution, first providing for control of execution in order to assure precision in its work.

The first major function of sales operation is, therefore, planning the operations and their control.

This planning and control function divides naturally into:—

1. Analysis
2. Making Sales Schedules
3. Carrying out the Detail Schedules
4. Checking Results
5. Improving Methods.

COMPARISON WITH THE PRODUCTION DEPARTMENT

In the Taylor System the Engineering Department first prepares drawings for the product and for special machinery, tools, dies, etc.; and prepares lists of materials, specifications, etc.

In the Taylor System the production order, accompanied by the drawings, lists of materials, etc., goes first to the Planning Room.

1. *Analysis*

a) Analysis of the information gathered by the preliminary survey concerning the market, the product, competitive products, service that the product and the organization may render to customers, etc. From this analysis results:

b) The laying out of a definite procedure for the sale and distribution of the product. This includes the plan for the extent and composition of the elements that are to constitute the selling organization including its field executives and salesmen.

c) Information is classified and a list prepared of the supplies, equipment and samples or stock required by the several units which are to carry on the selling and distribution of the product.

d) Responsibility and method is determined upon for the selection of supervisors and salesmen, their training and assignment to territories and duties, also for the education of dealers, and distribution of the product to branches, to customers direct or through general distribution centers or warehouses.

e) Analysis for the purpose of such preparation is followed by continuous analysis of performance based on summaries of branch office and Home Office records, from the angles of sales volume, distribution as to territory and as to commodities, and facts and figures presented by the financial, production and sales engineering departments.

These may result in:

f) Periodical recommendations concerning changes in the method of selling, distribution, or of remuneration of various elements of the sales force; possible changes in the general sales policy or at least in its application, also possible changes or improvements in the product itself.

In the Taylor System the first process in the Planning Room is analysis of the production order and the specifications by the Production Clerk, who lays out a general plan of production, and is responsible for subsequent processes in the planning room, and for modification of plans to meet emergency situations.

2. *Making Detail Schedules*

a) To execute the sales plan laid out as a result of the analysis outlined, detail schedules are prepared.

The various processes referred to are timed so as to properly coordinate, and are possibly charted graphically.

Thus it is decided, based materially as to the time when necessary product and finances are to be available, when advertising begins; its volume and character; when the training of field executives and salesmen is to begin; the extent of such training; when shipments to warehouse or agency are to be begin if the plan provides other than direct shipment to customers on actual sales orders, etc.

In this way a detail schedule is laid out for each operation which forms part of the general marketing plan.

b) Instructions in detail, and the supplies of all kinds that they require, are prepared and assembled for the carrying out of every planned step. These include instructions for each unit, such as the field instructors, supervisors, agency managers and salesmen. Also material for the instruction of salesmen and of dealers; advertising material; material for service to dealers or customers; arrangement of selling territories and salesmen's routes; provision for samples and expense funds, etc.

In the Taylor System a corresponding function is performed by the Route Clerk, who makes route charts, route sheets, prepares purchase orders, instruction cards, move-material and work-order slips, but does not issue them or start work on the production order.

3. *Carrying Out the Detail Schedules*

The detail work of planning having been completed, the actual work of marketing the product is started, under the supervision and control of the General Sales Manager.

a) Field executives, if required, are selected.

b) With their assistance, otherwise by the sales operating department heads delegated for the duty, salesmen are selected.

c) Instructions and supplies are issued to the training section and training begins.

d) Assignment to territories is made at time of selection, or as the results of the training course develop.

e) Samples, advertising matter to be carried, order and report forms and other supplies needed are issued to salesmen and they begin work. Expense funds are established at the same time.

In the Taylor System a corresponding function is that of the Order of Work Clerk, who takes the move-material and work-order slips previously prepared by the Route Clerk and issues them; i. e., starts work. He arranges the order of work and keeps a balance of work record; he arranges who shall do what, and when, in accordance with the plans.

f) As provided by the time schedule determined upon, instructions are sent at the proper time to the traffic and shipping department or warehouses, advising them what initial stock shipments to make or advising them to be in readiness to execute any certain predetermined plan of executing orders for stock or delivery on sales.

g) In like manner activity is started among all operating units.

4. *Checking Results*

Results are assured only by constantly checking performance against plans—actual sales against estimated sales or quotas, costs of selling against estimated costs, etc., not only as to totals but as to each operating unit or section of territory.

a) The reports of the work of the various operating units, and particularly of each branch, dealer and salesman are secured for reasonably short periods that can be compared with corresponding periods. These are tabulated and summarized and compared, performance against plan, and performance against previous performances, and supplied to both administrative executives and executives in charge of units concerned.

In the Taylor System the corresponding functions are performed by the Progress Record Clerks, and the Cost Clerks, who check progress and costs as work is performed; and by the inspectors in the shop, who inspect for quality and quantity.

b) Costs as shown by reports from field executives, branches and even salesmen, and figures supplied by the auditing and accounting departments are tabulated, summarized, set over against budget estimates and previous costs, worked out in actual amounts and in percentages as to sales. These and similar reports and statistics are supplied to the administrative heads of the business and to the heads of the field activities concerned.

5. *Improving Methods*

Aside from the analysis first referred to, and the checking of results, there are in many organizations provisions for the improvement of methods, such as:

a) Investigations for improving selling technique—methods of personal salesmanship, demonstrations, preparations of selling portfolies by salesmen themselves from material and testimony secured from the consumer or dealer; methods of service to customers, etc. Even time studies of sales operations are being made.

In the Taylor System this function is performed by specialized investigators — methods, time study and rate setting specialists.

b) Investigations for determining rates and also methods of remuneration, especially if a commission plan, or salary and bonus, or any other form of compensation is in use or under consideration whereby the amount earned is affected by the sales performance of the individual.

CONCLUSION AND QUERY

If it is discovered that the sequence of functions involved in selling, as developed by common practice, are analogous to the sequence of functions involved in production and recognized by scientific management technique, is it not probable that the principles of scientific management as developed for the shop in the Taylor System may be applicable in the selling department; and further, is it not probable that many of the actual *methods* of planning and control now used in the shop may be adapted to the use of the sales department? It is to attempt to find an answer to this question that the further work of this committee is directed; and to that end the cooperation of all sales executives is essential.

Charles J. Crockett, Chairman, Printz-Biederman Co., Cleveland; H. A. Burns, New Home Sewing Machine Co., Orange, Mass.; G. V. Carroll, Dennison Manufacturing Co., New York Office; George W. Dickerman, Remington Typewriter Co., New York; Henry P. Wherry, Rossendale-Reddaway Belting & Hose Co., Newark, N. J.; Harry Vincent, McElwain, Morse & Rogers, New York; H. S. Person, Managing Director, Taylor Society, New York.

SCIENTIFIC MANAGEMENT[1]

By General William Crozier[2]

GENTLEMEN: I think I ought to commence by telling you that I have no personal interest in the extension of the use of scientific management in industrial establishments, but having had some experience with it in certain Government manufactories of which I had charge, I should be very glad if any explanation I might make of the subject or any account of the results attained should be of assistance to the industries of Japan, for which country I feel a great and growing friendship. I should also state that I am not a specialist; that is, I am not an efficiency engineer; but I have had the same relations with the system which one of your number might have after having installed it in his own factory and had several years' experience with it. As Chief of Ordnance of the American Army I had naturally many duties to occupy my time. I had to look after the Officers' Schools in my department; I had to supervise the designs of artillery and other armament for the American forces; I had to regulate the assignment of officers to the various arsenals, in accordance with their capacity and with the needs of these establishments; and I had to attend to the many other matters which naturally press on the head of a national technical department. I therefore could not attempt to master the details of scientific management; but I necessarily had to understand the principles, and I know the results of our experience.

Mr. Frederick W. Taylor, at one time president of the American Society of Mechanical Engineers, was the first person, as far as I know, to present the subject of the management of industrial establishments as a science having its own logical conclusions drawn from the study of experimental data, instead of as an unguided art to be practiced by "rule of thumb" methods. Management as practiced under his scientific system falls into two principal divisions. The first relates to the order and system which should prevail in a manufacturing establishment, and the second has to do with the relations between the management and the workman, and the means of securing the cooperation of the latter in producing an increased output.

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[1] An address before The Osaka (Japan) Commercial Museum, Nov. 5, 1920.

[2] Retired; formerly Chief of Ordnance, U. S. A.

The question may naturally be asked, what is new in the first division? We have always endeavored to have order and system in a factory, and since the beginning of industry foremen and superintendents have occupied themselves with the orderly arrangement of the work in their charge; going home at night, and often lying away, thinking of the distribution of the work next day among the different workmen, and the use of the various machines with which the work had to be performed. But Mr. Taylor has shown us that the amount of thought which it is profitable to devote to this subject, and the attention and expense which will give a solid financial return, are so much greater than had been the practice before his time as to be really revolutionary.

For example: He has shown us that it is very well worth while, at the commencement of the execution of a manufacturing order, to make a complete list of all the separate component parts which it is necessary to make for the purpose of filling the order; to make out a time table of the progress of each of these parts through the shops, showing the time when each should have work commenced upon it, the machines which should be used for it, and the date at which it should be finished; so that all the parts shall pass through the shops without at any time producing congestion at any machine which might have more work than it could handle, or at any time leaving any machine without work appropriate to it. These "Route Sheets" as they are called, thus constitute a set of time tables in accordance with which the parts of the order pass through the establishment without collisions, and without lapse of occupation of machines or workmen, and each is finished at the time when it is needed; so that no part of the work is delayed because of waiting for something which should be ready to be assembled in its place, but is not on hand when wanted.

Another example is the preparation of "Progress Reports" showing continuously the state of the work, and exhibiting at once to the manager any point at which there may be failure to meet the prearranged schedule, without the necessity for a time-consuming study upon his part, which naturally he could make only at more or less infrequent intervals. Another example is the means of keeping track of the raw materials which should be used in carrying out each order, of estimating initially the amount of each which will be needed, of seeing that it shall be on hand when it is wanted and not much before, and of insuring that when issued to the shops, it shall be used for the purpose intended, instead, as oftentimes is the case, of being picked up by a needy foreman and used for some purpose for which it was not intended and to which its cost is therefore not properly charged. Still another example is the method of accurately determining the cost of each individual order which may be executed in the establishment; an ellusive subject which your experience as manufacturers has undoubtedly taught you is often treated with embarrassing inaccuracy. All of this systemization constitutes a task so important as to require a special personnel which has no other duties than to attend to it. The ordinary superintendent or foreman who has been expected to look ahead and map out the course of the work for which he is responsible, has practically always had to do this planning in addition to multitudinous other duties which have taken up substantially all of his time during working hours, so that the looking ahead has had to be done at other times. Scientific management requires that this foreman or superintendent shall have his mind free for his regular and proper duties, and that the systemization and planning shall be done by an individual who has no other task, and who generally has a set of assistants also with nothing else to do. This person should be selected from the staff of the establishment, and should be a man of position and authority, acquainted with the kind of work which is turned out, and generally conversant with all the departments of the factory. He should not take the place of the superintendent, but ought to be the superintendent's most useful assistant. His assistants should be selected from among the employees, and the practice should be avoided, as far as possible, of bringing in new individuals from the outside to perform any of the functions which the new methods prescribe.

The second division of the system relates particularly to the workmen; but it should be borne in mind that the system is not a welfare scheme for the purpose of improving the conditions of labor, but has for its first object the increase of profit by the diminution of the cost of production, and secures the cooperation of the working force in accomplishing this object by incidentally increasing the wages of labor.

It is a fact that very few workmen, even among those of long experience, know the best methods of performing the work which they are accustomed to do. The machinist very rarely knows the capacity of his machine; that is, he does not know whether the strength of the parts of the machine, or of the belting, is such that it would be dangerous to drive the machine at a higher speed or not; and of the three important elements in the operation of the kind of a machine which I know most about, that is, a machine for metal working—namely the speed, the feed, and the depth of cut—he usually knows only roughly and very inaccurately the best combination. Some of the factors which enter into the determination of these three elements are necessarily unknown to him; he probably does not know the physical qualities of the piece of metal which he is working upon; neither does he know the composition of the cutting in which the cutting tool should be worn out, so as to require regrinding. It is the part of scientific management to determine, accurately and scientifically, and by means of a specially skilled expert, these elements for the workman, and to give them to him for his guidance. It pays to do so.

It is also almost invariably the case that the order and sequence in which a workman habitually performs a given task are not the best. For example; in the forge shop of one of the arsenals, in the early days of the introduction of scientific management, a very simple instance was one in which the blacksmith, after forging a piece of steel, placed the next piece in his fire and then stood by, with his helper, while it was being heated to the proper temperature. Of course it did not take the specialist long to tell him that the proper way for him to do was to place the new piece of steel in the fire before he took the hot piece out, so that it might be heating up while he was forging the other, and thus diminish the idle time during which he and his helper were uselessly standing around.

In the case of each piece of work a set of instructions are written for the workman upon a card, which is given him for his guidance and by following which a surprising amount of time can usually be saved. Of course it requires close attention on the part of the workman to observe these instructions, and calls for a greater mental effort upon his part than he is in the habit of exerting in simply carrying out the usual method which has become more or less automatic with him. It therefore follows that some inducement must be offered him to make this effort, and to understand and carry out his instructions. And right here Mr. Taylor has shown us that the ordinary wages which are regularly paid to workmen are not those which are proper for the workmen's best efforts, but are the ones which have grown up in the neighborhood from being the best of which the workmen are easily capable. The wages therefore should be related to the output, for which purpose there are a number of methods available, the most common of which you are familiar with under the name of "piece-work." Piece-work payment has been practiced in many establishments for a great many years; but in America at least it has always been accompanied with difficulties, and the principal difficulty has been the necessity for changing the rate because of inordinate earnings when the stimulus brought out the real capacity of the workmen. It does not take many such changes to cause the workmen to lose confidence in this method of payment, and to agree among themselves to limit the amount of work which they will do, under the conviction, often only too well founded, that the more they do the more they will be expected to do, without corresponding increase of pay. It has therefore become a principle of the Taylor System that, once a tariff of rates is adopted, it shall not be changed unless the methods or circumstances of performing the work are changed. It is consequently necessary that the proper and reasonable rate shall be accurately determined in the first place, by scientific methods, which it is the business of the expert to know and to apply. With the tariff, or the premium, or the bonus, in accordance with the method of payment for output which may be followed, thus accurately determined, the best experience has shown that the average amount of earnings of a good workman, over and above the ordinary day wages of his class, should be from twenty-five to fifty per cent, and workmen who cannot earn this amount of increase, after a fair trial, are not suited to their jobs. It is found, however, that in winnowing workman out, so as to employ only those well fitted for their occupation, it is necessary to make but very few discharges. In the great majority of cases it is found that workmen are wrongly placed, and that with care other occupation can be found for them better suited to their capabilities, so that readjustment rather than discharge is the process which is indicated as the one to be followed.

Now a few words as to the experience in the arsenals of the American Ordnance Department: We occupied two years' time in the systemization of the first part of the system before doing anything affecting the stimulus or wages of the workmen, or the relations between them and the management; and I may here say that although the second part of the system is the